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GENERAL VIEW OF OLD BRIDGE AND EXTENDED PIERS FOR NEW ONE PARTLY BUILT

CONCRETE ARCH ROADWAY BRIDGE

Across the Genesee River at Rochester—Reconstructing and Extending Masonry Piers—Details of Concrete Work—Imitation Granite Facing—Tower Distribution of Concrete

A CONCRETE arch bridge is being constructed by the city of Rochester, N. Y., across the Genesee river, on the line of Central avenue, parallel and close to the bridge of the New York Central Railroad, in which several more or less novel features are being introduced. This is to replace a bridge 46 feet 2 inches wide which was carried on three lines of steel trusses supported by nine piers. The old piers are being lengthened and rebuilt to support the arches of the new bridge, which is to be 66 feet wide. The contractor is using the old bridge, which has been closed to traffic, to carry the traveler

by which he is placing the steel latticed arches which form the reinforcement of the arch ribs.

The new bridge consists of 14 lines of arch ribs spaced 5 feet between centers, each line consisting of spans of 18, 25, 33, 39, 47, 53, 61 and 68 feet respectively, these arches supporting a reinforced concrete slab floor. Each arch consists of a steel latticed arch which is constructed complete in the shop and, after being set in place, is completely encased with concrete. There is a roadway 42 feet wide between curbs, and a sidewalk on each side 9½ feet between curb and para-

pet wall. The parapet is surmounted by a balustrade comprising posts, balusters and rail, all of concrete.

In reconstructing the old piers, which were of masonry, more or less of the top masonry of each is removed and a facing of concrete placed enclosing the old masonry, and additional concrete employed to extend the piers to the desired height and for several feet up stream. The piers rest on bed rock which forms the bed of the river, and the concrete extensions also rest on this. To insure a bond between the old masonry and the concrete facing, a great number of iron bolts are inserted and firmly fixed in the old masonry, extending for several inches from the face of this and having their ends turned up for about an inch. These are inserted at an oblique angle with the face of the pier so as not to pull out easily. On these as brackets are placed reinforcing rods; the whole being embedded in the concrete facing. The nosings of the new piers are of cut granite, no course less than 12 inches thick, which were built before the concrete and provided with anchor irons which extend into the concrete bodies of the piers, when they are placed, to tie the two together. The steel arches are placed before the piers have been carried to their full height, and their footings are thus embedded in the concrete of the piers.

One of the illustrations shows a number of the steel arches in place; and this and another show the recesses left in the piers to receive the concrete of the arch ribs.

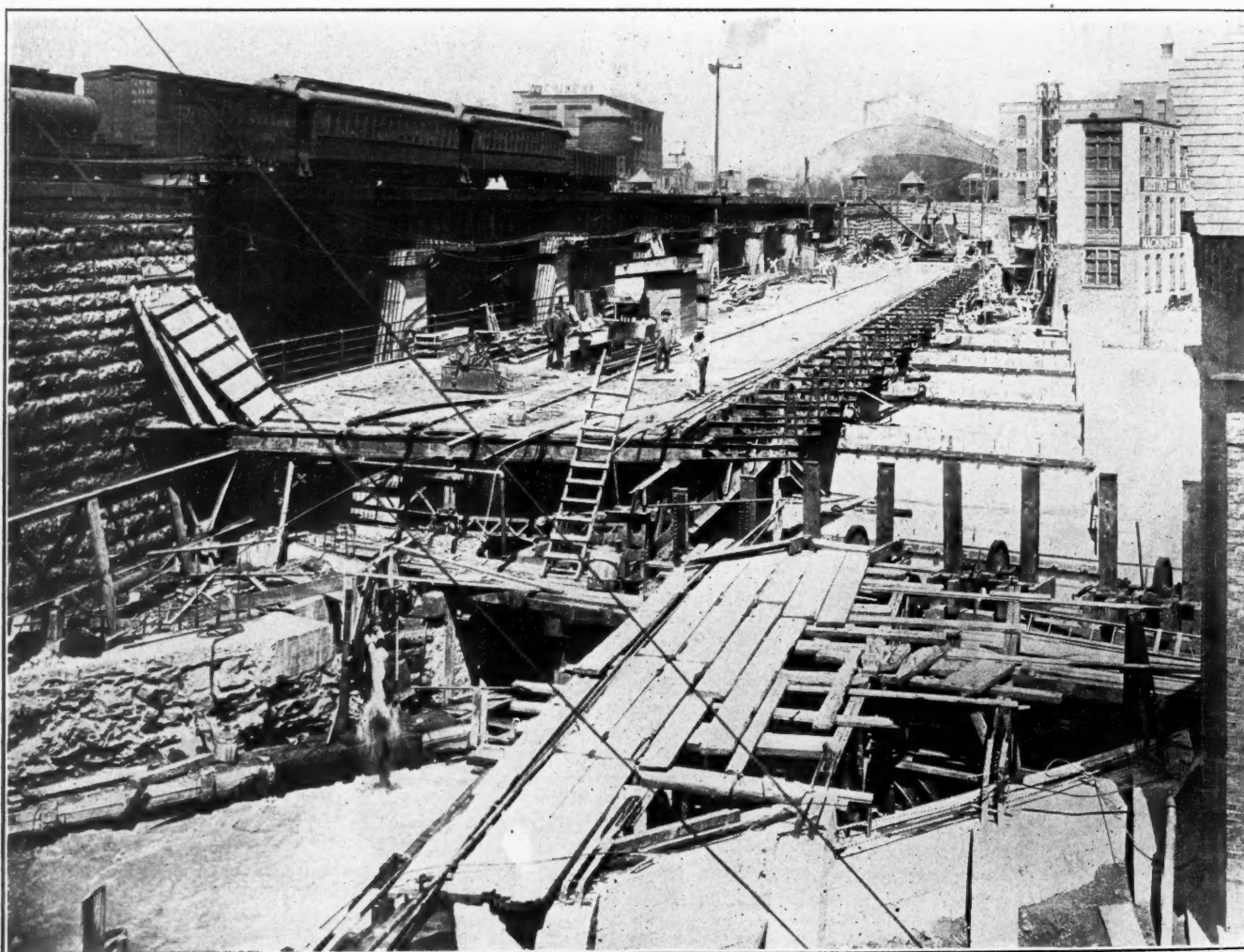
To assist in binding the concrete to the bottom chords of the arches, these are furnished with wires bent to the form of a flat heart or "pretzel" (by which name they are called) spaced 9 inches apart. These are sprung open and placed around the bottom flanges, from which they hang. The same object had been aimed at in a previous bridge by binding the bottom chord

with wire netting, but it was found that the concrete failed to pass through the netting as thoroughly and readily as was desired.

The forms for the concrete of the arch ribs are not supported on centering, but are suspended from the steel arches. This not only obviates the necessity of building centering over a river subject to floods, but also applies a weight to the arch before the concrete has begun to set, and thus to some degree avoids stresses and deflections in the concrete which would occur if the steel arch had carried no weight until after the concrete had set and the centering been removed, when the imposing of the weight on the arch would cause a deflection.

The roadway slabs are to be reinforced transversely with $\frac{1}{2}$ -inch square bars spaced 8 inches between centers, and longitudinally with $\frac{1}{4}$ -inch round bars 12 inches between centers. The roadway is to be paved with creosoted wood blocks. The curbs will be of granite. The sidewalk slabs will be of reinforced concrete, surfaced with 2 inches of asphalt mastic. They will have a slope of $\frac{1}{4}$ inch to the foot toward the roadway.

The balustrade spindles are cast separately in smooth cast iron moulds. Each will have a $1\frac{1}{4}$ inch wrought iron pipe passing through its center and extending about 2 inches from each end. When the parapet wall is cast, holes will be left regularly along its top, and into the holes will be inserted the ends of the pipes projecting from the lower ends of the balusters. After these are in place and lined up thin grout will be poured into the pipes and fill the holes in the parapet to firmly bind the balusters in place. The top rail will then be moulded in a form around the tops of the balusters and its own reinforcing rods, previously placed in position. Follow-



OLD BRIDGE PARTLY DEMOLISHED

Comparing this with illustration on p. 771 it is seen that buildings in the background have been partly demolished to permit widening Central Avenue. In the foreground is a raceway, and at the right the gearing by which the gates to the same are operated. In the distance, partly hidden by a building, is a tower for distributing concrete.

ing this the posts will be constructed in their forms. The rails will be made of such length as to extend about 6 inches into each post. Before the post concrete is placed, about 2 inches of clay will be plastered on the end of the rail, and the surface where it enters the post washed with clay and wrapped with paper or oakum. This is to permit expansion and contraction in the rail without moving the post.

In the center of each of the heavy balustrade piers, one of which is placed over each pier and abutment, will be placed a 2-inch pipe to carry lighting wires to furnish current to the lamps. A lamp standard will be placed on top of each pier, fastened in sockets left in the tops of the piers.

Beneath each sidewalk the two continuous recesses between arch ribs from end to end of the bridge will be arranged for use as wire conduits. Forty-pound steel rails, spaced 12 feet apart, will be placed across these recesses to support wire ducts. The two outside ones may be reserved for high tension and the inner ones for low tension wires. Near the center of the bridge a manhole opening will be left in each sidewalk to give access to the wire conduits.

A wooden dam about 4 feet high, just up stream from the bridge and making an angle with its direction interfered with the extension of the piers and was replaced by a concrete one parallel to the bridge, the lines of the two intersecting at about mid-stream. A trench about a foot deep was blasted out along the center line of the new dam, to hold it in place against the pressure of ice and logs which come down in considerable quantities at certain seasons. Also on account of the logs there was constructed from each pier nosing to the dam crest, a distance of about 10 feet, a buttress whose top was level with the crest of the dam.

The concrete is mixed in two grades, class A being 1:2:4 and class B 1:2½:5. The former is used in the superstructure, the latter in the substructure, dam and buttresses. Bids were received for class B only; where class A is ordered it is paid for at a rate 8 per cent greater than the bid. The sand is permitted to contain up to 7 per cent of clay, loam or other foreign matter. In proportioning, each bag of cement is considered as one cubic foot when the concrete is machine mixed, but as only 0.9 of a foot when hand mixed.

Forms are of planed pine, the surfaces next to the concrete being given three good coats of boiled linseed oil applied with a brush, and not used until the oil is dry.

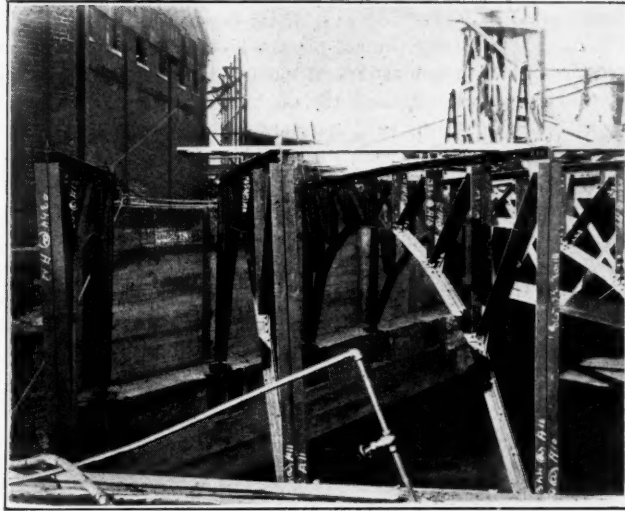
Each arch rib is to be poured continuously so as to form a monolith. A space two feet wide will be left at each pier, between the concrete of successive arches, to be filled with concrete after that in the arches has taken its set. This is to provide for any slight changes in the volume of the concrete while setting.

For the same reason a very unusual provision is made for joining new to old concrete. This and the one just mentioned are the result of experiments conducted by John F. Skinner, principal assistant city engineer, which we expect to describe in a later issue. The specifications read as follows:

Before laying new concrete upon or in contact with that which has been already laid and has set, the old material shall be thoroughly cleaned with water and brooms and, if necessary, roughened. Special care must be taken to remove all loose, inert or foreign material from the old concrete before any attempt at bonding the new work is made. If laitance has collected it must be carefully and completely removed before the new material is added. Upon this prepared surface shall be spread a thin coat of mortar which shall be mixed of one part cement and two parts sand, and which has been thoroughly re-tempered shortly after having taken its initial set. This mortar shall be applied thin, and shall be well brushed into the old concrete with ordinary brooms. After this has been done the new concrete shall be immediately placed on this bonding material. These joints must be made with great care and in a manner satisfactory to the engineer.

The use of *re-tempered* concrete is the special novelty.

A granolithic finish is applied as a facing to all exposed surfaces such as the balustrade, parapet, spandrels and faces of exterior arch ribs. It is 3 inches thick and is placed in the forms just before or at the same time as the placing of the mass concrete. It is composed of one part white Portland cement, two parts clean white sand and three parts crushed



STEEL ARCHES IN PLACE, READY FOR THE ENCASING CONCRETE

Barre granite which will pass a ¼-inch sieve. As soon as possible the forms are removed and the surface washed and scrubbed with water and brushes until the grit is exposed. This gives an excellent imitation of light granite.

Most of the details above described had previously been employed by the city on the Red Creek bridge, a single span bridge in Genesee Valley Park, or had been suggested by experiences with that bridge.

The concrete is being mixed with a Milwaukee mixer, immediately adjacent to which is a timber tower about sixty feet high from which it is distributed. The concrete is raised to the top of the tower, or to some intermediate point, depending upon the distance to the work in progress, in Koppel buckets. Here it is automatically dumped into chutes through which it runs to the point where it is wanted. These chutes consist of 10-foot lengths of U shaped steel troughs 15 inches across, which are suspended by small blocks and falls from a steel cable.

The coffer dams around the foundations are pumped out by a pulsometer. The steel arches and other heavy materials are handled by a traveling boom derrick and four-drum hoist; the traveler running on the floor of the old bridge.

The contractors for the entire work were Whitmore, Rauber and Vicinus. The plans were prepared and the construction is being supervised by the City Engineering Department, E. A. Fisher, city engineer.

WATER WORKS QUESTIONS

At the June 7 session of the convention of the American Water Works Association it is proposed to discuss a number of questions of considerable interest to water works officials, of which the following seem to us to be the most important:

Washing mechanical filters with clear but unfiltered water. Using oil for fuel as compared with coal. Red color in hot water. Calking lead joints with pneumatic tools. Metering free public supplies. Preventing electrolysis. Limitations to the use of hypochlorite. Steam turbine pumps. Under-registration of water meters. Locating leaks in mains under concrete pavement foundations. Connecting electric light wires to mains or fire hydrants. The most satisfactory method of fixing water rates, whether by a minimum charge varying with the size of the meter, an overhead charge varying with the size of the meter, a greater charge for the first few thousand feet than for larger quantities, or a uniform rate for all quantities sufficiently high to produce the necessary revenue. Concerning failures in the pipe system, have these increased during the past twenty years in greater proportion than the increased mileage of the system; are the failures uniformly distributed; are they aggravated by outside influences; in what kind and conditions of soils have most of the failures occurred, and has chemical action from the surrounding soil been the only apparent cause in any cases?

EFFICIENCY RECORDS

Desirability for Municipal Departments—System Employed in
New York—Division Into Three Classes—Use
by Civil Service Commission

By LEONARD FELIX FULD, LL.M., Ph.D., Examiner, Municipal
Civil Service Commission, New York

In a small private business organization there is no need for efficiency records. The head of the business enjoys a permanency of tenure and he is brought daily into such close and intimate contact with his employees that he possesses personal knowledge of the efficiency of each employee, which he can utilize not only in maintaining the efficiency of his working force, but also in determining which employees shall be promoted in salary or in position. The need of efficiency records first becomes felt when the organization becomes so large that the head of it does not come into personal contact with all of his subordinates, and if in addition either the head of the organization or his principal supervising subordinates do not enjoy a permanent tenure the need of efficiency records kept contemporaneously becomes even greater. In the various departments of the municipal public service the head of department enjoys an exceedingly short tenure of office and comes into personal contact with very few of the hundreds of employees under his jurisdiction. He is obliged to rely upon the reports of his supervising subordinates, who also do not enjoy the same stability of tenure found in the case of similar men in private life. This condition of affairs renders imperative that the records of the employees' efficiency be carefully kept.

Under the efficiency record system which has recently been installed in the civil service of the City of New York the supervising officer most closely in touch with the work of the employees is required to furnish quarterly a descriptive report upon the efficiency of the employees under his jurisdiction. In this report he divides his employees into three classes. In the first class he places those who have performed their duties satisfactorily. In every office this class ought to include a large majority of the employees, and in the case of these employees the reporting officer need only give their names and their titles. In the second class he places those whose work has been more than satisfactory—those who have distinguished themselves by marked intelligence and zeal in the performance of their duties. These employees are selected by the reporting officer by establishing a standard of average efficiency among the subordinates under his jurisdiction and then picking out for special mention those employees whose work has been distinctly superior to the grade of work performed by the majority of his employees. In the case of these superior employees it is required that the reporting officer furnish in addition to the name and title of the employee a specific statement of his reasons for considering his work above the average of his office force. The reason assigned by the reporting officer must give the particulars in which the employee's work excels that of the other employees under his jurisdiction.

In the same manner the reporting officer places in a third class those whose work has been less satisfactory or unsatisfactory. These are the employees whose work has been distinctly below that of the average of his department or bureau. For those who are placed in this unsatisfactory class reasons must also be assigned, giving the particulars of the unsatisfactory character of their work. On the report blank on which these efficiency reports are made a separate page is reserved for the employees of each of these three classes. This report blank is a four-page blank. On the first page are printed the instructions to the reporting officer and at the bottom is a space reserved for the date and the signature of the reporting officer. The second page is for the names and the titles of the employees who belong to the satisfactory class. The third page is intended for the names, the titles and the particulars of those who are considered to be in the "more than satisfactory" or "above the average" class, and the fourth page is reserved for

the names, the titles and the particulars of those placed in the less than satisfactory or unsatisfactory class.

In the preparation of these quarterly efficiency reports each bureau chief and other reporting officer establishes a standard of average efficiency for his bureau and classifies his employees in accordance therewith. When promotions are made, however, as the result of a promotion examination the employees of all the bureaus of the department are brought into competition and it would be unjust to rate competitively their records which have been prepared in accordance with varying bureau standards. Under such a system the employees under the jurisdiction of a lenient marking officer would be rated "more than satisfactory" or "above the average" for the same grade of work as other employees under a more severe marking officer might be rated merely "satisfactory" or "average" or even "less than satisfactory" or "below the average." To obviate this difficulty and prevent this injustice there has been provided under the New York system of keeping efficiency records a board of promotion for each department of the municipal government.

The board of promotion consists of at least three superior administrative officers of the department designated by the appointing officer of the department subject to the approval of the Municipal Civil Service Commission. In the actual administration of this efficiency record system the members of the board of promotion are generally the more important bureau chiefs or other supervisory administrative officers of the department and the appointment is made by the head of the department. This board of promotion holds a meeting quarterly for the purpose of considering the efficiency reports submitted by the rating officers of the departments, and at these quarterly meetings it rates the employees subject to its jurisdiction. The board of promotion organizes by the election of a chairman and the designation of a clerk to keep and transcribe stenographic minutes of its deliberations and to make the entries in the efficiency record book of the department. The board considers each of the reports submitted to it separately. It may in its discretion accept the reports as submitted or it may change the reports as they affect individual employees. If in the exercise of its discretion, however, it sees fit to change a report, the members of the board are required to state the reasons for this change in the minutes of the board of promotion.

Employees who have been reported by their superiors as having performed satisfactory service and in whose case the promotion board agrees with the report of the employee's superior officer are rated "C" on all items of their efficiency record. In the case of those who have been reported for sufficient reasons as being either more or less than satisfactory and in the case of those who having been reported as merely satisfactory are considered by the members of the promotion board for reasons specified in their minutes to be either more or less than satisfactory, the board is required to assign definite marks in each of the six items of their efficiency record. These items are quality of work, quantity of work, general conduct, executive ability and capacity for initiative, average general efficiency, and punctuality. The average general efficiency mark is the average of the ratings given on the first four items of the efficiency record—quality of work, quantity of work, general conduct, and executive ability and capacity for initiative. The mark for punctuality, which includes attendance, is kept separately. No mathematical formula is required to be followed in determining the mark for average general efficiency; the determination of the relative weight to be attached to each of the component elements of this mark is left entirely in the discretion of the promotion board. It is, therefore, allowable to rate an employee "C" in three of the four items of his efficiency record and yet give him an average general efficiency mark of "B," if in the opinion of the promotion board the fourth item of the record on which he was given a rating of "B" is more important in the case of that employee than the other three items of his record.

The marks are entered in specially prepared efficiency record books supplied to each department by the Civil Service Commission. The efficiency record books, the original quarterly re-

ports to the promotion board and the minutes of the promotion board's meetings are inspected at regular intervals by an examiner of the Civil Service Commission. This inspection not only affords an opportunity for the introduction of such additional safeguards as may be deemed necessary to protect the integrity of the records, as, for example, the time-stamping of each report with the date of its receipt, the initialing of all changes in the marks entered in the efficiency record book, etc., but also presents an opportunity to the heads of the various departments to discuss the needs of the department from the point of view of its personnel with a representative of the Civil Service Commission, who can report to the commission such suggestions and recommendations of the heads of departments as seem to possess practical merit. A detailed report is submitted by the examiner after each departmental inspection.

Once each year a transcript of the marks entered in the efficiency record books of each department is sent to the Civil Service Commission and entered upon the efficiency record cards kept by the Civil Service Commission for each employee in the city service. These efficiency records are kept for all employees in the competitive class of the civil service, excepting the members of the uniformed police and fire-fighting forces. Furthermore, no efficiency records are kept by the Civil Service Commission for school teachers, laborers and employees in the city service who are not subjected to examination. In every promotion examination the average percentage of each candidate is determined by his percentage on his written examination and his percentage on his efficiency record and seniority. A weight of 50 per cent is attached to the written examination and a weight of 50 per cent is attached to the efficiency record and seniority. No candidate, however can have his name placed upon a promotion eligible list unless he secures at least 70 per cent in his written examination.

[The writer will be pleased to give any additional information which municipal officers may desire regarding the New York system for the keeping of efficiency records and the rating of these records in promotion examinations.]

LOUISVILLE WATER WORKS FILTERS

The filter plant of the Louisville water works, which has been described by us, was in continuous and successful operation throughout the year 1910, although for a considerable portion of the time it was working under adverse conditions due to the delays in completing the coagulating basin and the cleaning of the reservoirs. During the year 8,315,272,730 gallons of water were filtered at a cost per million gallons of \$3.46. This cost varied from a maximum of \$4.51 in March to \$2.57 in August. The principal item of variation in the monthly cost was the coagulant, this varying from the maximum of \$1.751 to a minimum of \$482.65. The cost per million gallons of the several items was as follows: Superintendence and laboratory pay-roll, 42 cents; filter operators' pay-roll, 92 cents; coagulant, \$1.49; wash water, 5½ cents; heat, light and

power, 23½ cents; supplies, 10 cents; repairs, 15 cents; incidentals, 9 cents.

The average results of the filtration was a reduction of the alkalinity from 68 to 59; a reduction of the bacteria per c. c. from 14,860 to 208; of the turbidity from 196 to zero. The amount of wash water required averaged 2.82 per cent of that filtered, this varying from a minimum of 1.82 in June to a maximum of 6.80 in August. The alumina sulphate used averaged 1.25 grains per gallon, this varying from 0.57 in August to 1.99 in July. The free ammonia was reduced 42 per cent; albumenoid ammonia, 71 per cent; nitrites, 75 per cent and oxygen consumed, 63 per cent.

The bacterial reduction obtained by the filters was not as great in most instances as would be considered desirable, and it was hoped to produce better results by installing a small auxiliary apparatus for supplying hypochlorite of lime in conjunction with the other media used in filtration.

A gratifying reduction in typhoid death rate has occurred since the filter was put in service. The average number of deaths from typhoid for the years 1906, 1907, 1908 and 1909 was 127, equivalent to 58 per 100,000 of population; while for the year 1910—the first full year in which filtered water was used—the death rate was but 26 per 100,000. It is believed this would have been much lower but for the fact that many of the citizens persist in using well water, which is more or less polluted.

As stated, the coagulating basin was not in service during the entire year; in fact, the southerly division was not in use until August 25, and the northerly division had not been accepted from the contractors at the end of the year, owing to the development of certain leaks in the bottom and side walls.

SIDEWALK FALLACIES

By JEROME B. LANDFIELD

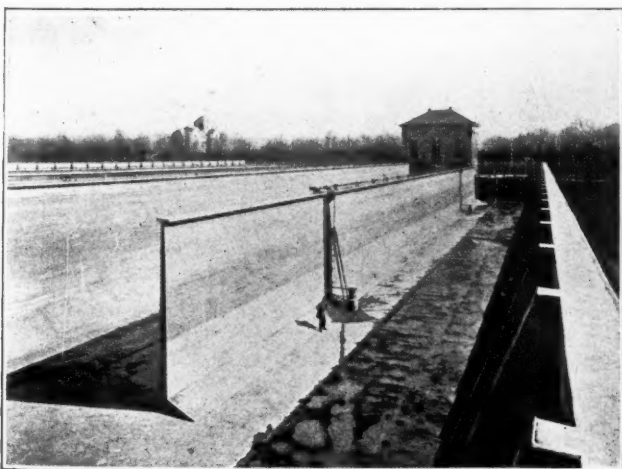
A good proportion of all of the sidewalk work that is being done nowadays is constructed under the direction of engineers, or in accordance with specifications laid down by them. It is therefore strange that there should be such a diversity in the methods employed and in results obtained. This is a curious state of affairs, considering the extent of the work and the opportunities afforded for determining to a nicety the best possible practice.

Where there is such diversity of practice it naturally follows that in some cases it is correct and in others all wrong. There seems to be a mistaken notion that sidewalk work is not deserving of serious attention and may be properly left to the untrained man. What is true of sidewalk work is equally true of concrete curb and combined curb and gutter work. Surely this is a great mistake and municipal engineers in particular should realize that they owe it to their profession to devote sufficient attention to the subject to secure first-class results.

In this paper I desire to point out a few fallacies that have crept into sidewalk and curb and gutter work from different sources, especially those which have been sanctioned in many instances by engineers of standing.

Probably the most generally accepted fallacy is that of the cinder sub-base, and it is a fallacy that has cost our cities hundreds of thousands of dollars. It is probable that the fact that many are to-day specifying that a sub-base of cinders or sand should be put under a walk can be explained in this way. In the laying of flags of natural stone the under side of the flag was nearly always irregular and to dig out and shape the natural soil to fit it was a task quite out of the question. It was far easier and more practical to fill the excavation with cinders or sand, which would naturally mold itself to fit the configuration of the under side of the stone. What was more natural than to continue the same practice when concrete walks came to be laid, and to set up the argument that this sub-base ensured good drainage and was a safeguard against heaving due to frost?

This sounded perfectly plausible. In fact, I presume that a large portion of those who read this article will regard the views expressed in it as heretical. But the following fact



COAGULATING BASIN, SHOWING BAFFLE WALL, LOUISVILLE

appears pertinent. If one lifts a good-sized flat stone from its resting place in a field in the winter time he will notice that there is rarely to be found beneath it any frozen ground, while all around are evidences of frost. The reason is that, first of all, the natural soil that forms its bed is tightly packed so as to make a snug resting place that did not admit water readily, and, next, that the stone itself under these conditions affords good protection.

Now consider for a moment the concrete sidewalk. In constructing this, first the natural soil is removed whether it be clay, gravel or hardpan, making a trench that becomes the finest kind of reservoir to collect moisture. This trench is then filled with porous material that never becomes as compact as the original soil, but which absorbs and holds moisture like a sponge. Even if tile is placed in the bottom of this trench, this does not make the sub-base any the less a sponge. Four or 5 in. of concrete would have protected the compacted natural soil that would hug it so closely as scarcely to admit any water, but severe cold is very liable to freeze the cinder foundation in spite of the concrete. These are some of the considerations that lead me to believe that the cinder sub-base is useless and detrimental, even when carefully drained with tiles, and extended practice bears this out.

Another fallacy that is very prevalent, but which is happily growing less, is the idea that a sloppy top-coat is good practice. Somehow or other many concrete men have got the notion that in sidewalk work the wetter the mix the better. They argue from experience in other kinds of work where they find that poured concrete makes a dense mass and reduces the voids, and do not take into account the points wherein the conditions differ. Let us consider just what the conditions of sidewalk work are and how they affect the question of how much water to use.

In sidewalk work water-tight molds are not used in which to form the blocks. The mass dealt with is thin and has two large surfaces, one of which is exposed to the absorbent action of the ground beneath, and the other to the drying action of the air. If, therefore, too much water is put into the concrete there is a tendency for it to drain away and carry with it particles of cement washed from the aggregate. If less water were used and the mass well mixed, the whole amount of water would be closely engaged with the cement. In warm climates it is frequently argued that more water should be used in order that the surface may not dry out too rapidly. But here we have also a fallacy. If there is more water at the surface than is needed for the setting of the cement, there is almost certain to have been flushed to the surface considerable neat cement and as the surplus water evaporates the foundation is laid for hair-cracks. The correct way is to use the proper amount of water and then protect the surface against the heat.

The lower course should have just enough water so that it will not quake when tamped. The top-coat should be mixed stiff enough so that you can mold it in the hand and it should be put on while the lower course is fresh and green. Then tamp it lightly, remove the surplus material by striking it off, and finish immediately with a wooden float. The tamping of the top-coat is of great importance for fine work and it really does not add to the expense, as it simplifies finishing. The first effect is to make the top-course dense and to bond it mechanically to the base. The moisture is distributed evenly throughout the mass and enough is gently flushed to the surface for immediate finishing. Where the top-coat is put on as wet as mortar, or sloppy, the amount of moisture in upper and lower courses differs, and consequently the change in volume while setting is in different ratios. This is a fruitful source of checking.

There is one more cogent reason why the top-coat should never be put on sloppy. Sidewalks differ from some other kinds of concrete work in that the surface has to be finished by manipulation. If the finished surface is to be durable it should be finished as soon as possible. Now if the concrete is too wet the finisher stands around half an hour or so waiting for the surface to dry out enough for him to do his work. If

he starts to use his trowel while it is too wet he flushes neat cement to the surface and this, being the softest part of the mass, makes a scale that wears away easily if it does not flake off. If, on the other hand, he waits until the surface is just plastic enough he is bound to disturb particles that have begun to set and which for the sake of strength and durability should have been left untouched in their original positions. Is it not strange that in view of these simple facts, easily demonstrated in practice, the big city of Chicago should specify a sloppy top-coat for her sidewalk work?

A number of other minor fallacies in sidewalk work might be pointed out, but they are mainly local and not widespread. One of these, however, which I desire to refer to is the notion that it is necessary to leave the forms in place in sidewalk work until the concrete has set. There is no special objection to this, except that persistence in the idea may prevent a contractor from adopting some of the modern styles of forms, which are usually of steel and more expensive than the old wooden forms, and the outlay for which is reduced if each section of form may be used more frequently. Experience during the past few years with this style of form has shown this to be practicable without any detriment to the pavement.

AUTOMATIC STREET LIGHTING

At the annual meeting this year of the New England Association of Gas Engineers there was a brief discussion of the matter of automatic street lighting. One of the members stated that at Roxbury, Mass., the gas company has installed near the works 93 automatic lights, 43 of which were in use ten months and 50 of another type in use five months; the first named being without chimneys and the second with chimneys. The failures of these automatic lights averaged about 2 per cent, due to various causes, such as frost and inherent defects. The lights without chimneys averaged 1.7 mantles per month and those with chimneys one-half mantle, the breakages of the former being due in the majority of cases to the instability of the lantern itself and to the wind. The former lamps failed to light on an average of once every 54 days and to extinguish once in 150 days. In the other system the average was one lamp failing to light once in 63 days and to extinguish once in 39 days.

The lamps are lighted by pressure impulse from the governor house at the Roxbury station by putting on a momentary pressure of 6½ inches for lighting and 5½ inches for extinguishing. This impulse amounted to a pressure of 4.8 inches at a distance of ¾ mile from the power house, but is slightly less effective during the winter. Where the impulse system is used it is necessary to take into consideration the fact that the holders nearer the works are apt to take up the impulse and make it less effective at greater distances. Aside from this, however, the impulses are almost instantaneous a few miles away, and lamps have been lighted six miles from the station. Impulses could be intensified by main and outside stations operating simultaneously.

These lamps are sold under the trade name of Kilchman, which is operated by a pressure impulse on a float in mercury, and the Monand, which operates by means of a diaphragm which sets clock work in motion. The speaker stated that the experiments made at Roxbury indicated about two minutes as being the most desirable length of time for maintaining the impulse.

CONCRETE PAVING IN KANSAS CITY

Kansas City, Mo., is paving roadways in residence streets and alleys this year with concrete mixed and laid similar to the concrete foundation for brick and asphalt pavements, except that a little more care is used in tamping it to give a smooth surface and an even crown. No mortar is placed on top of the concrete. Expansion joints are placed every 25 feet. On some streets the curb is built at the same time as the pavement. The city expects to place about 12,000 sq. yds. of this pavement on streets at \$1.10 per square yard and the same amount on alleys at \$1.25 per square yard, including five-year maintenance.

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Concrete Methods

The older engineers who may read this will undoubtedly recall the time 20 or 25 years ago when most engineering schools taught that the only way to mix concrete was to make a dry mixture and tamp thoroughly until the moisture was brought to the surface. During the last 10 years practice in this respect has changed greatly, and now a wet mixture is preferred for perhaps the majority of structures. Another instance of changed ideas in cement work is the nature of the aggregate used, especially the sand or "fine aggregate." It is no longer considered necessary to exclude all clay, some even claiming that 5 per cent. of this is beneficial. Probably the fact is that this amount is beneficial if in such form or such nature that it will be distributed uniformly throughout the material, but is objectionable if it is not.

There are other minor points connected with the use of cement and concrete concerning which ideas have changed, but

possibly none of these would seem more radical to the construction engineer than the removal of the ban against re-tempering concrete after it has begun to set. A faithful inspector is expected to watch this point carefully and see that any concrete or mortar which has taken an initial set before use is thrown away. For the same reason great stress is laid upon the necessity of not walking upon concrete or masonry after it is laid, dressing stones upon the wall, etc.; and an argument advanced in favor of wet concrete has been that the ramming necessary with dry mixtures is apt to break the set of that below. In view of this it would seem to be revolutionary to propose the use of re-tempered mortar or concrete, and yet just this is being done by a conservative engineer of the highest reputation. In the article in this issue describing some concrete work at Rochester, a quotation is made from the specifications which not only permits the retempering of concrete for certain purposes, but requires it. This, of course, was not done in order to favor the contractor, but because the engineers believed that it would be of advantage to the work. Their reasons for introducing this radical change and some of the experiments upon which they were based will be the subject of an article in next week's issue.

Under the heading of sidewalk fallacies a writer who has had considerable experience in concrete work calls attention to another old and almost universal practice in connection with concrete work which he believes to be erroneous in principle and unnecessarily expensive in practice. While we are not quite ready to subscribe to his ideas concerning the undesirability of cinders under concrete walks, we believe that they are worse than useless where they are not underdrained or at least will not drain naturally toward some low point from which escape of the water is provided. At any rate the idea is deserving of serious consideration, especially in view of the hundreds of miles of concrete walks which are being laid every year.

Asphalt Repairing in Reading

On August 1st of last year work was begun repairing asphalt streets in Reading, Pa., with the use of a Hooke portable plant which, with the necessary tools, cost \$598.70. Five men were employed to operate the plant and work was continued until the latter part of November, at which time a semi-portable plant was leased from a contractor with the idea that the work could be done with it more cheaply.

The work done by the portable mixer was very satisfactory in operation, but where all new material was used the cost per square yard was \$2.50. When it was found that the cost was running so high it was decided to utilize the old material removed from the streets, and patches were made using one-half new asphaltic mixture and one-half old asphalt. With this method of operation the cost was brought down to \$1.35 per square yard for binder and wearing surface. There was a source of loss in the use of this mixture, in the idleness of the men while the mixture was heating, as it required 2½ hours to heat a panfull of material to the required temperature, and ½ hour to empty and fill the pan again. To meet this objectionable delay Mr. Ulrich recommends the purchase of a duplicate plant in order that the two may be operated alternately. This method he figures would make the operation of repairs almost continuous without any increase in labor cost.

The semi-portable plant was started in operation on October 10th and continued until quite cold weather. The cost of repairing by using this plant varied from \$1.20 to \$1.35 per square yard. "This cost is excessive for a plant of this kind, owing to short time of operation and to the large number of men employed, which latter was necessary as our asphalt pavements were wearing out in far greater ratio than the repairs were being made; and as the time of cold weather was rapidly approaching it became essential to push the work as speedily as possible, even at a slightly greater cost. With a properly regulated plant of this kind, there is no reason why, under conditions similar to those which existed this year, the

street repairs should exceed a cost of \$1.10 per square yard and the repairing of cuts \$1.20 per square yard. . . . In the economical maintenance of asphalt pavement it may be stated that whenever repairs are needed to 30 per cent of the surface area of any pavement the entire area should be relaid."

NARROWING MINOR RESIDENCE STREETS

Under this title we published last week an abstract of a paper by Charles Mulford Robinson before the Philadelphia Conference on City Planning. Mr. Robinson requests us to state that this paper summarizes two chapters of a book which is now in press entitled "The Width and Arrangement of Streets: A Study in Town Planning," which is being published by the Engineering News Publishing Company.

SEWAGE PURIFICATION AT READING

THE Reading sewage purification plant, which includes screening, pumping, sedimentation and final treatment on sprinkling filters, has been described by us. One of the more unusual features of this was the screen or, as it is called by the inventor, the segregator. This is practically a revolving screen with fine mesh, the sewage discharging into the interior of the screen and flowing through the openings, the suspended matter being strained out and retained within the screen, where it is gradually moved forward to the further end and dropped into a sludge pit. In his report for the year 1910 city engineer Edmond B. Ulrich makes the following statement concerning this appliance:

"During the year the segregator at the pumping station has been out of service 1,500 hours or an equivalent of 63 days of 24 hours each. In 1909 this figure was 77 days. It has been impossible to keep this device in sufficient repair to keep it in constant operation and, therefore, a second device in the spare pump well should be installed.

"During the year the screenings removed by the segregator have amounted to 31 cubic feet of wet solids per million gallons of sewage screened. These screenings contained approximately 90 per cent moisture. This high amount of moisture is an undesirable feature of the segregator, because screenings containing 90 per cent moisture give twice the weight to handle for the same amount of dried material as do 80 per cent screenings. The criterion for screening efficiency should be the thoroughness with which the larger suspended matters are removed and not only mere bulk of removed matters. All materials large enough to clog sprinkler nozzles should be screened out, but it is more economical and just as satisfactory to remove finer solids by sedimentation. The cost of screening has been about \$1 per million gallons of sewage, while the cost of sludge removed from the settling tank has been about 5 cents per million gallons."

In the operation of the sprinkling filters it was found that clogging in the top 6 inches of the filter material is most serious in later winter and early spring. As warm weather comes the accumulated solids are voided by the filters. During the past year there was clogging in the fall, which had not occurred in the two previous years, this being attributed to the increased rapidity of flow through the settling tank, due to the increasing amount of sewage, which increased the strength of the filter influent and made the burden upon the filter heavier. "This shows that the ordinary method of rating the capacity of sprinkling filters at so many million gallons per acre per day is both unscientific and impracticable. The rate depends upon the strength of the influent, the character of the filtering material, uniformity of distribution and atmospheric temperature. With the present strength of influent the filters can be operated at a rate of between 2 million and 2½ million gallons per day."

The riser pipes which carry the sprinkler heads in one of the filters projected about one foot above the surface of the material, because the contractor had failed to fill the bed to the intended depth. During the night of February 7 the temperature fell to minus 10 degrees and in the morning 75 nozzles were found frozen completely shut. In the other bed, where the filter material had been carried up to the end of the riser

pipe, not a nozzle was frozen. "This shows the need of the filtering material coming to the tops of the riser pipes, in order to keep these pipes from cooling off in times of extreme cold."

The effluent from the filters is clarified of the solids voided by the filters by passing it through sedimentation basins. These basins were cleaned seven times during 1910, the amount of sludge in one averaging 1.95 cubic yards per million gallons treated, that in the other 2.09 cubic yards. This sludge has from the first been disposed of by pumping it upon the area adjacent to the basins. It has very little odor and after exposure to the air becomes perfectly odorless and upon drying assumes a humus like consistency.

COST OF PARK MAINTENANCE

Hudson County, N. J., owns and maintains six parks, varying in area from 5.898 to 207.823. The total area of the six is 517.904 acres.

The largest of these parks, West Side park, contains 6.91 miles of graveled paths, 2 miles of driveway, 58 miles of open lawn and meadow, 2¼ acres of water area, 22 acres of planted area. During the year 1910 the cost of maintaining West Side park was \$34,048.02, or \$318.21 per acre. Some of the principal items of labor in this maintenance cost, with the quantities involved, were as follows:

Drives, 42,446 sq. yds. Cleaning, 1.4 cts.; repairing, 0.7 cts.; sprinkling, 1.4 cts.; rolling, 0.7 cts.; total, 4.2 cts.

Paths, 50,940 sq. yds. Cleaning, 0.8 cts.; repairing, 0.5 cts.; edging, 3.2 cts.; rolling, 0.2 cts.; total, 4.7 cts. per sq. yd.

Fields, 48 acres. Rolling, \$3.515; mowing, \$16.25; cleaning, \$11.544; sprinkling, 16.9 cts.; fertilizing, \$1.281; reseeding and sodding, \$1.995; total, \$34.754 per acre.

Lawns, 10 acres. Rolling, \$1.40; mowing, \$88.75; cleaning, \$64.749; sprinkling, 95 cts.; manuring, 60 cts.; reseeding and sodding, \$3.15; total, \$159.60 per acre.

Flower gardens, 500 sq. yds. Planting, 45 cts.; manuring, 10.1 cts.; weeding, 20.8 cts.; watering, 1.8 cts.; total, 77.7 cts. per sq. yd.

Trees. Planting 49, 86.7 cts. per tree; manuring 8,000 trees, 2.2 cts. per tree; watering, 44.8 cts. per tree; pruning 8,000 trees, 0.5 cts. per tree; spraying, 4 cts. per tree; falling 18 trees, 27.1 cts. per tree.

Playgrounds. Cleaning 2,280 sq. yds., 6.6 cts. per sq. yd.; repairing, 3.2 cts. per sq. yd.; equipment, 25 pieces of apparatus, \$2,770. Instructing, 95,600 visitors, 0.6 cts. each.

Guards for 107 acres, \$45.107 per acre; police, \$89.719.

The above items were for wages only. Under the head of supplies the amount necessary for repairing drives was 0.9 cts. per sq. yd.; that for repairing paths, 0.5 cts.; for mowing fields, 51.5 cts. per acre; fertilizer for fields, 31.3 cts. per acre; seed, 82 cts. per acre; seed for lawns, \$2.636 per acre; manure, 50 cts. per acre.

Plants for flower gardens, 46.2 cts. per sq. yd.; trees, \$4.315 each; 25 pieces of equipment, \$237.27.

POLICE SIGNALS AND FIRE BOXES

In his latest annual report the chief of police of Reading, Pa., Harry S. Levan, makes the following statement: "I cannot speak too highly of the red light signal system. It has aided this department greatly in the apprehension of criminals. Many important arrests have been made through this system. It has been the source of dispatching men quickly to places where riot and gross disorder prevailed. The officers have been educated to such an extent in this signal system that they are constantly on the lookout for its glare, and it is gratifying for me to state that on a number of occasions I have been able to get at least seven men in three minutes' time, which proves that it is working very efficiently."

The Reading Fire Department has adopted the plan of painting a red band about three feet wide around all poles to which fire boxes are attached. This is done for the reason that some of these poles are so thick that the box cannot be seen from all sides. It aims to keep this paint bright and easily recognizable from a considerable distance.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

Street Repair Work Is Begun

Marion, Ind.—Street repairs in Marion have started on an extensive scale, and the city street cleaning department is busy from early morning until late at night. The asphalt manufacturing machine which was purchased by the city several years ago has been brought forth from its winter quarters and placed in position along Spencer Avenue near the end of Boots Street. A large number of workmen are in charge of the machine and the season's patch work has started.

Narrow Street Is Dangerous

Boston, Mass.—Complaints are frequent, particularly from automobilists, on account of the narrowness of Norfolk Street, in the Dorchester District. The street is no wider than an ordinary residence street and two car tracks have been placed in it. A pole line close to the curbing



Courtesy Boston Herald

A DORCHESTER STREET TOO NARROW FOR SAFETY

adds to the danger. There is barely room for an automobile or large vehicle of any kind between the track and curb, and when two cars are passing there is no other choice of roadway.

Mayor Inspects Street Work Done by City Forces

Philadelphia, Pa.—Mayor Reyburn has inspected the street repairs being done by the emergency repair corps of the Highway Bureau, under Commissioner Thomas T. Haines, who has 32 gangs at work on streets occupied by car tracks. There is a total of \$500,000 available for this work and the Mayor has declined to approve contract to a paving company, believing that the city repair gangs can do the work satisfactorily. "The work being done by the city's own forces is all right and so long as that condition prevails there is no need for awarding contracts," said the Mayor.

Citizens Will Give Land for Boulevard

Binghamton, N. Y.—If plans now under way materialize Binghamton will soon be given land for a handsome boulevard along the bank of the Chenango River. Frank B. Newell, who recently acquired a valuable property on Front Street, running to the river, has signified his willingness to deed to the City of Binghamton 50 feet from the rear of his premises to be used for a boulevard, providing his neighbors will give an equal amount. It is understood that Alonzo Roberson, another large property owner, will make a similar contribution, all being required that the city agree to lay out a boulevard along the river bank. The cost of a retaining wall would be small and with cement walks along the shore and seats beneath the large elms which overhang the stream, the boulevard would prove most delightful.

Viaduct to Be Open to Public June 1st.

Milwaukee, Wis.—Grand Avenue viaduct, which was described in the Municipal Journal on May 10, and around which there has been almost constant dissension, frequent clashes and at least one court suit, will be opened to the public on June 1, according to Chairman James Sheehan, County Board. Little remains to be done to place the viaduct in first-class condition, and this is being finished by the county under supervision of Engineer Gustav Steinhagen, despite the protest made by the National Engineering Company against the "arbitrary and unreasonable" action of the county. The east approach is completed with the exception of some little surfacing, and the west approach is nearly paved.

Plan Elimination of Grade Crossings in Pawtucket

Pawtucket, R. I.—A report has been made by a commission having the matter in charge to eliminate grade crossings in Pawtucket, at an estimated cost of \$1,220,247.



Courtesy Providence Journal

GRADE CROSSING TO BE REMOVED

The report, however, does not discuss the question of division of expense between the city and the New Haven Railroad. At the point shown in the plan, Broad Street and Railroad Avenue, the railroad tracks will be relocated, moved to higher ground and depressed. A new street, much needed, will occupy the present railroad right of way.

Water Scarce; Oil to Be Used on Streets

New Britain, Conn.—State Highway Commissioner MacDonald has notified Selectman Newton that he will ship a car tank of road oil here within the next few days to be used on the highways in town. The roads are at the present time in very poor condition as a result of the prolonged dry spell and Selectman Newton has requested the commissioner to send some oil here in the hope that it will improve them. Owing to the small amount of water in the reservoir rigid economy must be used to avoid a shortage this summer unless rain comes to the rescue, and consequently the roads cannot be sprinkled with it. The macadam is so dry that it breaks up easily under the automobiles which go through town at high speed, and unless something is done soon the highways will have to be resurfaced.

Will Try Oiling Streets

Waterbury, Conn.—The Street Department is just entering upon its long period of spring and summer activity. Grading is going on in several sections of the city and Superintendent Benjamin Chatfield has his plans all mapped out for the new departure of oiling the streets instead of depending wholly on water as a dust layer. The oil campaign will start within the next 10 days.

Leads in Mileage of Paved Streets

Kansas City, Mo.—With its 357.59 miles of paved streets and boulevards, Kansas City leads the cities of the country in its paving mileage, it is said. And practically every foot of it has been laid, and much of it relaid several times, since 1880. There was practically no street paving in Kansas City prior to 1880.

New Board Faces Serious Paving Problem

Chicago, Ill.—More than two-thirds of the streets in Chicago's downtown district are in bad condition, and Mayor Harrison's new board of local improvements is facing a huge task in carrying out the program for repaving these thoroughfares. Although the former board of local improvements paved more downtown streets in the last two years than had been resurfaced in the ten preceding years, much of the extensive work planned by the old board remains to be carried out by new men. The condition of some of the streets in the downtown district is declared to be "frightful." Old "turtle-backed" granite blocks, which were laid twenty years ago, still are doing service, a menace to traffic and a disgrace to the city. Inspection of the streets in the downtown district revealed that there are 123½ blocks of pavement in bad condition, either in need of repair or repaving. There are 36½ blocks of good creosoted wood block or asphalt pavement, exclusive of Jackson Street and Michigan Boulevard, which are under the jurisdiction of the South Park commissioners.

City Will Be Improved by Elimination of Grade Crossings

Youngstown, O.—The plans of the Erie grade crossing elimination were explained in detail by City Engineer F. M. Lillie at a recent meeting of the Engineers' Club. By the use of diagrams and maps it was shown how the completion of the proposed plan will give both the railroad and the city better grades. The total cost of the improvement is estimated after careful figuring at \$2,000,000. Under the law requiring the city to pay 35 per cent., the city's portion would be about \$700,000. The street railway, however, pays part of the city's cost, and Mr. Lillie said he thought \$500,000 would cover the city's share. It will be necessary to rebuild parts of several sewers because of the lowering of the tracks. Mr. Lillie mentioned the theory of elevating the tracks, which is advocated by some people, and said the Erie refused to consider that at all. He said he thought it was out of the question for Youngstown to consider an elevated road through the heart of the city also.

Refuse to Pay Twice for Paving

Rensselaer, N. Y.—Interesting developments are anticipated as a result of the action of the Rensselaer Common Council in authorizing a bond issue of \$145,000 to redeem the old bonds issued to pay for the granite block pavement in the old village of Greenbush. Property owners who have paid for the granite block pavement abutting their property are demanding exemption from paying for the new bond issue. They claim it is an injustice and threaten to take the matter to the courts before they will pay for the improvements the second time. Comparatively few of the property owners paid for the granite block pavement and the money realized from this source is to go toward paying for the new bond issue. It has been suggested that the citizens who have paid for the improvement be exempt from the proposed additional expense if it is necessary for a special act of the Legislature to bring about such a thing.

Mayor Persuaded 100-Foot Draw Bridge Is Necessary

Boston, Mass.—The necessity of consulting with the War Department officials on the construction of the Chelsea Bridge took Mayor Fitzgerald to Washington, where he spent the better part of a day. Mayor Fitzgerald will use his influence to have the city of Boston and towns in the neighborhood affected by the Chelsea Bridge appropriate the \$65,000 necessary to build a bridge with a 100-foot draw. Mayor Fitzgerald went to Washington to oppose the War Department's proposition that Boston raise \$65,000 for the Chelsea Bridge. He felt that that was too much money, but after he had talked with General Bixby he changed his mind. The general pointed out how far behind Boston was in the matter of bridges and how necessary it was to have the 100-foot draw.

SEWERAGE AND SANITATION

Sewer Work Halts; Fund Is Overdrawn

Minneapolis, Minn.—Sewer construction work has been ordered suspended all over the city because the main sewer fund is overdrawn \$15,000 at least. More than 400 men employed on the city's ditches must go without their pay for two months pending realization of funds on sewer bond sales. It is patent, say city officials, that the city council has ordered work begun to cost more than \$200,000 when but \$50,000 was available.

School Children Co-operate in Freeing City of Mosquitoes

East Orange, N. J.—The School Board and Board of Health, with the aid of school children, are co-operating in the work of mosquito extermination. The subject of Mosquito Breeding Places is given out as topic for school composition and the children are encouraged to hunt up breeding places and describe them, together with an account of the general theory of the relation of mosquitoes to disease. Each breeding place is reported to the Board of Health, an inspector is sent to investigate, and if the report is correct a prize of a dime is given to the scholar. The board has appropriated \$200 to carry on this work.

Gases in Big Sewer Exploded With Terrific Force

Defiance, O.—A terrific explosion of gas, the detonation of which was heard all over the business part of the city, occurred one morning last week in the sewer main extending from First to Second Streets on Clinton. The greatest force of the explosion occurred at the corner of First and Clinton Streets, where the large manhole cover there was blown high into the air and broken in two. The street commissioner has ordered all sewer to be flushed in an effort to prevent a recurrence of similar trouble in the future.

Sanitary Subjects to Be Taught in Schools

Indianapolis, Ind.—Dr. J. N. Hurty, secretary of the State Board of Health, who has been using the common schools of the State, when possible, as a means of spreading the doctrine of disease prevention advocated by the State board, has prepared an outline of sanitary subjects for consideration by the teachers of the schools. The outline will be printed, and a copy placed in the hands of every teacher in the State by the time school opens next fall.

Must Cover the Meat

Indianapolis, Ind.—H. E. Barnard, State food and drug commissioner, has notified meat dealers who have stands at the city market, either to place cases for the protection of their meat displayed there or to show that they have ordered such cases. The corps of field inspectors spent last week, on market days, watching the meat stalls, and reported the necessity at once. Reports of shoppers with soiled hands handling the meat, of its being unprotected from dust and dirt and germs, were made to Mr. Barnard. Butchers who have stands in the city market house have demanded that the city put in a refrigerating plant, and uniform glass covered cases, despite the fact a city ordinance requires the butchers shall put in refrigerated cases at their own expense. Members of the safety board do not believe the City Council will appropriate this money, but are willing to assist the butchers in delaying prosecution by the State Board of Health, if possible. Mayor Shank is opposed to the appropriation, saying he sees no reason why the city should spend \$100,000 for a refrigerating plant for the accommodation of the butchers and fish men, who compose a small part of the total number of stand holders in the market. Butchers say if the city will start the plant they will pay increased rentals.

No Dairies May Be Established in City

Indianapolis, Ind.—The city Board of Health has decided on the enforcement of an ordinance forbidding in the future any person to own more than two cows in the city. The order is not to affect anybody who already owns more than two cows. This will prevent any new dairies from starting inside the city. While the ordinance has been in effect some years, it has not been enforced strictly, and there are several dairies in the city.

WATER SUPPLY

Vote for Municipal Control of Entire Water Supply

Niagara Falls, N. Y.—Pure water for the south end as well as the north end of the city is assured after the magnificent victory last week, when the water proposition to parallel the mains of the Western New York Water Company was carried by an overwhelming vote. The vote of the taxpayers shows in no mistaken terms that the entire water supply of the city must be under municipal control. The south end voters were just as emphatic in favor of the city laying mains in the streets now supplied from mains of the private company as the north end—a stinging rebuke to the company's claims of faithful service and its assertion that it was treating consumers fairly. It was a remarkable exhibition of the sentiment of the people. Men and women voted almost as a unit for spending \$360,000 to extend the city mains to the south end of the city.

New Water Main Bursts

Minneapolis, Ind.—The new 36-inch water main on Aldrich Avenue, put in service last week, burst, flooding basements of business places on Plymouth Avenue from Aldrich Avenue to Third Street. A torrent of water filled the street, rushing over curbs and sidewalks. Where the main burst a hole 20 feet deep, 50 feet long and 20 feet wide, was torn in the street, stopping traffic on the Plymouth & Bloomington Street car line. When the water was finally shut off sand two feet deep covered Plymouth Avenue from Aldrich to Lyndale Avenues. The feeder main extends from Camden Place to Lyndale and Hawthorn Avenues and was laid to supplement water pressure so as to serve a large portion of the city which has long lacked water in sufficient supply to cope with drought.

City Officials Inspect Source of Water Supply

Portsmouth, Va.—The members of the Portsmouth Water Commission, together with the members of the Norfolk Water Commission, are making a visit to the Lake Drummond Canal to inspect the proposed source of supply for city water for Norfolk and Portsmouth. The two bodies are the guests of Mr. M. K. King, president of the Lake Drummond Canal and Water Company. The result of the trip will largely determine the action of the two cities with regard to a new municipal water plant. It is understood that the Lake Drummond Company has made a proposition to the commissions of the two cities, which is looked upon as being very advantageous. The proposition is that a pumping station will be established on the banks of the Pasquotank River and that water from that river will be pumped into the canal. At this end of the canal another pumping station will be established and from this station the water will be pumped from the canal and delivered through pipes to the city under pressure. This relieves the Lake Drummond Company from getting water from Lake Drummond, there having developed some question as to the ownership of the lake, and gives them their water from a running stream. It also relieves the city of Portsmouth from the necessity of establishing an expensive plant to pump the water from the lake into the city.

Company Considering Plans to Increase Water Supply

New Britain, Conn.—To increase the water supply in the reservoir and thus ward off a water famine, of which there is grave danger within the next few months, unless there is considerable rainfall, the directors of the Plainville Water Company have under consideration the matter of installing a pumping station at Hamlin's pond. The officers of the company admit that the situation is getting quite serious and something must be done if a water famine this summer is to be avoided. The reservoir is a great deal lower at the present time than it has been at this season in any previous year and there is not near enough water in the lake to supply the needs of the town during the summer. The problem has confronted the company for some time and the officers feel that it can only be solved by using the water in Hamlin's pond. Orders have been issued forbidding the use of outside faucets while the factories are in operation and it is now the intention to notify the property owners that until water is more plentiful the use of outside faucets and hydrants must be stopped entirely.

Water Plant May Bring Litigation

Salem, Ore.—Although Mayor Lachmund has won out in killing the ordinance to authorize a bond issue for the purchase of the Salem water plant, it is said that there is a storm brewing due to break in a short time which bids fair to involve the city in litigation. It is rumored that the mayor plans to compel the present owners of the water plant to live up to the franchise and furnish the citizens of Salem with a pure and ample supply of water. If this cannot be accomplished by referring back to the agreement in the franchise granted the company the Mayor will try to secure ordinances to bring about the desired condition. Many of the people of Salem approve of the Mayor's action in vetoing the ordinance, while many others bitterly oppose his attitude. Whether or not the Mayor succeeds in forcing the company to furnish better water, many business men are desirous that the city own its water system, and several have stated they intend to work to this end.

Verdict Against City for \$25,000

Newark, N. J.—After deliberating for a little over an hour the jury in the suit brought by the Weidmann Silk Dyeing company against the city of Newark for damages sustained by the company through the diversion of water from the Passaic river by Newark, brought in a verdict of \$25,000. The Weidmann company had brought suit for \$100,000, and presented claims aggregating about \$75,000, the principal items of which consisted of \$17,000 for money expended in the laying of pipes and the erection of a filter, \$51,000 paid to the Passaic Water company for water, due to the fact that the dyeing concern could not take water for its purposes from the river, and \$5,000 paid to Mr. De-Gray for the use of his land in connection with the securing of water. The claim of the Weidmann company, was that these expenditures were made necessary through the diversion of water from the Passaic river, and that Newark was liable for such part of the expenditure as the diversion of water made by Newark bore to the whole diversion, or about forty per cent. of the amount.

Favorable Report on Water Supply

North Tonawanda, N. Y.—The report of the State hygienic laboratory on the water supply of Lockport, Tonawanda, and North Tonawanda for domestic purposes, which was completed last week, shows that the water supply now taken from the Niagara River for the three communities is the best it has been in years.

Purchase of Water Systems Is Urged

Portland, Ore.—More than 200 residents of Southeast Portland, most of them from the Mount Scott district, appeared before the Water Board recently and urged the early consummation by the board of the purchase of the Woodmere and the Woodstock private water systems. They declared they feared that if the final acquisition of the private plants was delayed much longer they would be unable to secure Bull Run water before the dry summer season, in which case they would suffer on account of shortage of water. In many homes, they asserted, they are now short of water and that conditions will become serious within a few weeks unless relief is given. They also asserted that there is much typhoid fever in the Mount Scott district, which they attribute to the use of water from the private systems which is obtained from wells. The board already has decided to purchase the Woodmere system for \$50,000 and this probably will be taken over June 1 and all the consumers provided with water at city rates. The Woodstock system has not yet been purchased, but members of the board are negotiating with the owners.

Water Supply Grows Short; Sprinkling Is Stopped

Dayton, Ohio.—Service Director Ely has ordered a stoppage of all street sprinkling. This action was taken after a conference of Safety Director Lienesch, Fire Chief Ramby and Service Director Ely. The officials do not wish to alarm the public, but the situation they are facing is considerably worse than it has ever been before at this time of year. The increase in the water consumption of the city over last year can be seen when the average consumption per day for May last year was 9,000,654 gallons, while it now averages above 12,000,000 gallons every day.

STREET LIGHTING AND POWER

Palo Alto Lighting Plant Lowers Rates

Palo Alto, Cal.—As a result of competition from the United Gas and Electric Company rates for electricity for lighting purposes have been reduced by the municipal plant from 10 cents to 7½ cents per kilowatt hour maximum and 4 cents minimum. For motor and power loads the rate for any quantity is reduced to 4 cents. For heating, cooking and household electric appliances the rate is reduced to 3 cents per kilowatt hour for any quantity. The reduction was made possible because of the monthly profits accumulating in the municipal plant amounting to \$2,000 to \$2,500 a month.

Satisfactory Report From Light Plant

Richmond, Ind.—Satisfactory returns from the Municipal Light Plant for the month of April were reported to the council meeting Monday evening. The total receipts were \$8,694.18, while the excess of receipts over the operating expenses was \$6,876.38.

Company Cuts Price of Gas

Tacoma, Wash.—Gas will be cheaper in Tacoma after July 1. Close on the heels of progressive moves that have followed one another so rapidly as to be almost continuous, official announcement has been made by Henry H. Hyde, general manager of the Tacoma Gas Company, that beginning about July 1 the price of gas will be reduced 10 cents per thousand cubic feet. Hereafter the price will be \$1.15 per thousand feet net, grading down as the consumption per meter increases. Hitherto the rate has been \$1.35 per thousand, but a discount of 10 cents per thousand is allowed on bills paid within two weeks after the meter is read, so that the gas consumer who pays his bills promptly has been able to obtain gas for \$1.25. The reduced price, however, will mean a saving of thousands of dollars to consumers in the course of a year.

FIRE AND POLICE

Motor Patrols Prove Economical

Detroit, Mich.—The Detroit police department has issued a statement bearing on the use of motor patrols in the police service for six months from October 1, 1910, to April 1, 1911. "The installation of automobiles in place of horse-drawn patrols has been remarkably successful in this department," says Police Commissioner Croul. "During the six months we have shown a saving of \$7,112.51 in favor of the automobiles and in addition we have derived most endless benefits on account of the greater speed and distance the automobiles travel."

Police Dogs Presented by Citizen

Cincinnati, O.—Two genuine police dogs, at present members of the Paris (France) force, will be sent to Cincinnati within the next few weeks as adjuncts to the local department. Safety Director Small has been offered the canines by Henry Ziegler, who is at present in France, and he immediately replied that the gift will be greatly appreciated. These dogs have been specially trained for their peculiar work, and those who have seen them on duty in Paris say they seem to possess almost human intelligence. They not only aid the police in making arrests and in locating criminals, but also guard the prisoner so that he will not make his escape. The two bloodhounds which the local department tried out some months ago did not come up to expectations, and consequently were not retained by the police.

Report Approves Work of Fire Department

Los Angeles, Cal.—The work of the fire department and the new high-pressure salt-water system at the blaze at Twelfth and Webster Streets recently was commended in a letter by W. J. Duval, district secretary of the Board of Fire Underwriters of the Pacific, read before the ordinance and judiciary committee of the City Council. A report from Mr. Duval was called for by the president of the board, in view of a request to the underwriters to lower the insurance rates. The report found that the work of the department was only handicapped by a lack of high pressure hose tenders.

New Police Motorcycle Sub-Station a Benefit

Toledo, O.—Since the new police motorcycle sub-station, which adjoins No. 4 engine house at Monroe and Bancroft Streets, was placed in commission, April 20, the efficiency of the police force has been increased to such an extent that Chief Perry D. Knapp has announced that he will recommend that similar sub-stations be established as soon as possible in the north and south sections of Toledo. At the new station, which is a one-story brick structure, equipped with desk, chairs and telephone, two motor patrolmen are stationed daily from 3 P. M. until 7 the following morning, working in 8-hour shifts. The men at the new station respond to calls and complaints from that section of the city west of Collingswood Avenue and the Air Line Junction district. In addition they go to all fires to which the firemen of No. 4 engine house are summoned, and when not



Courtesy Toledo Blade

POLICE SUB-STATION FOR MOTORCYCLE MEN

otherwise engaged one of the men patrols the streets in the vicinity of the station and tries the doors of business houses, while his partner remains in the station. In cases of emergency the men at the sub-station are assisted by motor patrolmen and detectives from police headquarters. "The speed with which motor patrolmen work," said Chief Knapp, "is of great benefit to the police department, and I hope soon to have the motorcycle squad increased so that two men can be kept on duty at the new sub-station every hour of the day and night."

Automobile Fire Engine Test a Success

Washington, D. C.—The new automobile fire engine sidled up to a fire hydrant in front of No. 2 engine house one day last week and went through its paces to the great delight of a large multitude. Several hundred thousand gallons of perfectly good water was squirted all over Fourteenth Street during the test, and many a coal cart driver, truckman and automobilist who tried to dash too close to the five-hundred-gallon-a-minute stream, emerged looking as if the clouds had broken loose upon him. The opinion of the officials who watched the test and took measurements is that the automobile fire engine is a success. Commissioner Rudolph, Commissioner Johnston, Chief Wagner, Fire Marshal Nicholson, and T. M. Robinson, superintendent of machinery, were among the officials making the test.

New Automobile Engine Damaged in Accident

New York, N. Y.—The new automobile engine of the Fire Department was returning from a small fire in a tenement house when an automobile express truck ran into it at Fifth Avenue and 115th Street. The front wheels of the engine were broken and it was put out of commission. Dennis O'Connor, on the truck, was thrown to the ground and had two ribs broken.

Fire Chief Twenty Years

Paterson, N. J.—May 5 marked the twentieth anniversary of Chief John Stagg's being at the head of the paid Fire Department, and while he might retire on half-pay, he will continue in his present position until the new fire headquarters are completed and the automobile apparatus installed therein. Thus he will have seen the fire-fighting paraphernalia change from the days of old goose-neck engines throwing water through leather hose to the modern gasoline-propelled and driven apparatus.

GOVERNMENT AND FINANCE

Refuses Offices to Commission

Oklahoma City, Okla.—This city has two sets of contending municipal officers as the result of a refusal of the Mayor and city council to turn over the city offices to the newly elected Mayor and commissioners. Court proceedings will be brought by the officers-elect to secure possession of the offices. The holdover Mayor and council claim that the election by which a commission form of government was adopted was illegal.

City to Collect Franchise Fees

Spokane, Wash.—Commissioner C. M. Fassett is going to get after the public service corporations, with a view of forcing the collection of franchise fees which past administrations have allowed to accumulate. The commissioner has introduced a resolution, which was passed, instructing that a list of all public service corporation franchises be made, with amount of fees which should be paid to the city, how much of this has been collected and how much is still due. The street car and telephone companies, the Western Union, the Postal and a number of smaller corporations are included in the order.

Portland Inspects Spokane's City Government

Spokane, Wash.—Portland may adopt Spokane's plan of city government, according to Councilman George L. Baker of the Rose city, who is here examining the way the Inland Empire capital conducts its municipal affairs. "At the recent election," said Mr. Baker, "a charter commission was provided for with the idea of instituting the commission form of government. As a member of the council, which elects the commission, I am in Spokane to study what you have done and are doing. From reports I have heard the plan in your city is working beautifully."

Large Bond Issue Easily Carried

Oakland, Cal.—By better than the required two-thirds majority of the votes cast, the people of Oakland recently passed the three bonding propositions presented for their consideration, thus taking another big step in placing Oakland in the forefront of western municipalities. The bonds carried by about a 2½ to 1 ratio and are for school buildings and an auditorium building, the latter to cost \$500,000. The total amount of bonds authorized by the election is \$2,993,900. In addition to the increased school facilities and the many things in favor of the city owning the big convention hall, there is an additional advantage in the passage of the bonds—that of increased property values in those sections of the city where improvements are contemplated under the various issues. This is an immediate gain to a large number of Oakland residents and a prominent factor in the adoption of the bonds. The individual outlay in the slight increase in taxation is more than compensated by this one feature alone.

City Borrows Half Million at Lowest Rate in Its History

Birmingham, Ala.—At a meeting of the Commissioners one day last week, the city borrowed \$500,000 from the Birmingham Trust and Savings Company at the lowest rate ever given Birmingham in the history of the municipality. A loan was made bearing interest at 3¾ per cent. for four months at the discount rate. The offer to lend Birmingham money at such a low figure is taken to be a splendid tribute to the integrity of the city and the personnel of the commission. In commenting on the loan one of the officers of the Trust Company said: "The figures laid before us that Birmingham owned \$1,000,000 were sufficient to discourage almost any banker. However, our bank had faith in the integrity of the Commissioners, their determination to get Birmingham on a financial basis and their serious task facing them. We have been fully informed of the condition of Birmingham financially. From the figures Birmingham will be in good shape within a short time. We took the view that all interests here should co-operate with the Commissioners. Our institution always endeavors to connect itself with the best interests here. We did not fail to grasp the fact that the Commissioners needed every assistance that could be rendered by the people of this community."

STREET CLEANING AND REFUSE DISPOSAL

Watervliet Will Clean Up June 12

Watervliet, N. Y.—The Municipal Improvement League of Watervliet has selected the week beginning June 12 for the annual clean up and the Executive Committee is working on the general plan. As Mayor Hanratta has already come out in favor of the movement when the committee meets with him he will ascertain in what respects the league will expect the city authorities to help. The Mayor has said that he believed that everybody should assist in this matter and is willing to have the police and firemen help. The general plan calls for the division of the city into districts by wards. The Chairmen of the Ward Committees are to secure the services of enough aides so that one man may look after a block. It is not likely that the league will give any prizes this year.

Night Removal of Garbage Indorsed

New York, N. Y.—Asserting that his experiments in collecting ashes and garbage in the night had been successful, William H. Edwards, Commissioner of Street Cleaning, has recommended to Mayor Gaynor that the night plan be adopted in the five boroughs. He said citizens, civic bodies, boards of trade and other organizations had given hearty indorsement to the system. Night collection, he said, would cost more, but the benefit to horses and men, particularly in summer time, would be worth the expense. The Commissioner's letter to the Mayor, in part, reads:

"Very few complaints have been registered, and those were based on noise. Conditions in this respect cannot be expected to be perfect at first. We have the hearty co-operation of citizens and various organizations. This system should be extended. It will undoubtedly cost some extra money, but the conditions which are improved under this new system warrant the expenditure."

The Commissioner says the system is the most successful one that had ever been undertaken in his department. The nuisance of ash dust flying in the air and the unsightly removal of garbage, are done away with, and the streets and sidewalks made more presentable in the day time.

Starts Free Collection of Garbage

Beaver Falls, Pa.—Having once come to a definite decision on the garbage question, the members of the sanitation committee lost no time in starting the good work. At the last meeting of Council it was decided to gather garbage free and this committee was instructed to procure several one-horse wagons and start the good work.

Garbage Reduction Company Sues City

Dayton, Ohio.—The City is involved in a law suit with the Dayton Reduction Company and has appealed from a judgment the company secured in the sum of \$79,000 for failure to furnish the Dayton Reduction Company as much garbage as the city had rashly bound itself to furnish in a rather absurdly framed franchise. Later \$89,000 more was demanded of the city, raising the total obligation alleged to be approximately \$160,000. The second part of the suit, that calling for an additional \$89,000, is now pending in the Common Pleas Court.

Clean-up Day a Big Success

Montgomery, Ala.—"Clean-Up Day" was a success far beyond the expectations of the officials of the sanitary department of the city. Throughout every section of Montgomery both sides of the streets were dotted with metal receptacles, barrels, boxes and devices of all descriptions, which contained one of the most varied assortments of refuse and rubbish that could be found in any city of the size of Montgomery. With one accord the people co-operated with enthusiasm with the sanitary department in making "Clean-Up Day" the best Montgomery ever had and they were successful. School children were given a package each of disinfectant to sprinkle around their homes, and Wednesday noon about 2,500 pounds of it had been sent out by the sanitary authorities.

Street Oiling Is Proving Popular Dust Preventive

Altoona, Pa.—Employees of the highways department this morning began the work of cleaning off the loose dirt from Fifth Avenue between Tenth and Eleventh Streets, preliminary to oiling the roadway as per an agreement entered into between the city and the property owners, whereby each shall pay half the cost of the oiling. Other streets have already been treated.

RAPID TRANSIT

Electric Lines Will Soon Be Completed

Burlington, N. C.—The management of the Southern Traction and Power Company has announced that contracts have been given for the completion of its electric lines for the city of Burlington and extension to Graham and Haw River, and that cars are to be in operation July 1. Work on this line was practically completed a year ago, when matters were tied up in court. All legal complications have been adjusted.

Motor Busses to Take up Passenger Traffic

Indianapolis, Ind.—A company capitalized at \$150,000 has been organized in Indianapolis for the operation of regular automobile passenger service in Meridian street, from Monument place to Thirtieth street. It will be a competitor of the street car lines in Illinois and Pennsylvania streets and the fare probably will be placed at 5 cents. It is planned to put six cars in service. If the Meridian street line is a financial success the company plans to extend the service to other parts of the city.

Considering Consolidation of Lines or 50-Year Lease

Boston, Mass.—A new and important alternative for the proposed consolidation of the Boston elevated and West End street railway properties is now before the legislative committee on street railways. The bill for the consolidation of the properties on which the joint commissions made report to the legislature is still before the committee. The controversy relative to the dividend rate to be assured the West End stockholders has been the most important issue. Instead of the proposed consolidation the committee is now considering the alternative of substituting a 50-year extension of the West End lease at 7½ per cent. on the West End common stock.

To Build its Own Subways

Chicago, Ill.—Chicago's policy regarding construction of proposed subways under the present administration has been agreed upon. At the suggestion of Mayor Harrison, who took part in the discussion, the Council Committee on Local Transportation placed itself on record as favoring absolute municipal ownership of the subways, the construction to be paid for entirely by the city without aid from the traction companies or any other outside source. The decision was regarded as a blow to all advocates of subway construction by private capital.

Trolley Line Gets Franchise

Salt Lake, Utah.—By an unanimous vote, the Davis county commissioners have granted to the Utah Light & Railway company a franchise for a street car line from North Salt Lake through Bountiful to Centerville. The city council at Bountiful has already granted the company a franchise through the town, and now a committee of prominent citizens is going before the officials of the street railway company with a request that the proposed extension be built at once.

City Fight on Trolley Service

Jersey City, N. J.—Trolley traffic conditions in Jersey City were discussed at length at a recent conference in City Hall and further plans were made for the appeal which is to be presented to the Board of Public Utility Commissioners urging that body to exercise its rights under the new law and enforce adequate trolley service. The conference was called by Police Commissioner Job Lippincott, who recently assigned detectives on the job of carefully noting the overcrowded trolley cars and incorporate their observations in affidavits. It was decided to employ six citizens to follow up the findings of the detectives, to corroborate their discoveries and back up their statements to the Board of Public Utility Commissioners. The cumulative evidence is expected to accomplish some real results. "The appeal to the Utility Board," said Commissioner Lippincott, "is the quickest way to end the intolerable conditions on the Jersey City trolley lines." Mayor Wittpenn suggested that an engineer be engaged to look over the situation, suggest a system of trolley loops and prepare himself to contest any engineering objections that may be offered to the citizens' demand for more trolley cars.

MISCELLANEOUS

Proposes Bond Issue for New Playground

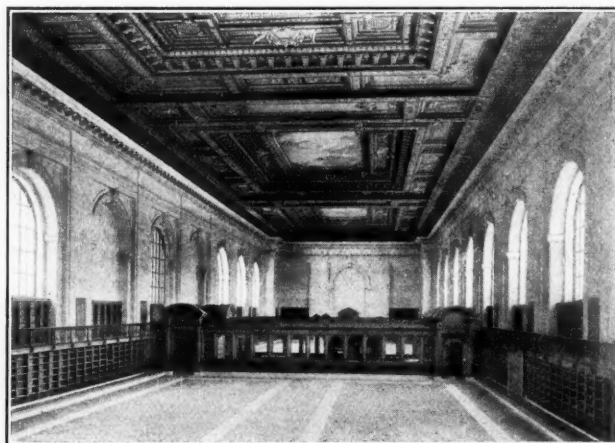
Dayton, O.—Dr. Lefkowitz and Dr. Curtiss interviewed Mayor Burkhart recently about the chances of a bond issue campaign to provide an extensive addition to the city's playground facilities carrying with the people. The Mayor proposed that the campaign be instituted with the Chamber of Commerce.

Park Playgrounds Are in Full Swing

Rochester, N. Y.—With the park playgrounds in six of the city parks open, the Children's Playground Association started in the fifteenth season of the work that it does for children who are forced by circumstances to spend the summer in the sweltering streets of the city instead of in the cool shade of the countryside. Four playgrounds opened last week, two were already open and two more will be placed in commission as soon as necessary arrangements can be made.

New York's Public Library Opened.

New York, N. Y.—The New York Public Library, was opened on the 23rd with impressive ceremonies, in which participated the President of the United States, the Governor of the Commonwealth, the Mayor of the city and distinguished civil and religious dignitaries. Noted scholars, artists, scientists and educators were in the company of five hundred which gathered in the vestibule for the exercises of dedication and at the public reception which immediately followed six thousand persons, representatives



DELIVERY ROOM, NEW YORK LIBRARY

of the metropolis, traversed the corridors of the great structure and inspected its manifold beauties. Other libraries in the world, as Mr. Taft pointed out in his address, exceed this which is given forever to the people, but none excels it in the manner in which its contents are made available for the education of mankind. Erected at a cost of \$10,000,000, standing on ground appraised at double that sum and containing almost priceless treasures of literature and art, it is a fane which millions of pilgrims are to visit in years to come. The accompanying illustration of the delivery room and desk is typical of the general style of the interior of the building. The finish is oak and the mural decorations are rich in coloring. The panels on the ceiling represent sky and clouds.

New Housing Code

Columbus, O.—Columbus took a long step forward recently when the City Council passed a housing code which is a distinct advantage over the housing regulations of any other American city. If properly maintained and enforced it will add much to the beauty as well as to the healthfulness of the capital city of Ohio. The distinctive point of the code is that it regulates the construction and use of dwelling houses as well as of tenement houses, guaranteeing to the tenant a minimum standard of light, air, yard, water, toilet facilities and general sanitary conditions.

Citizen Offers Electric Sign Ordinance

Toledo, Ohio.—An ordinance pertaining to electric light signs has been presented to the City Council by Safety Director Mooney and was referred to the committee on ordinances. Mr. Mooney explained in a letter accompanying the ordinance that it was presented to the building inspector by a citizen, who was interested in the better regulation and maintenance of signs. Director Mooney also explained that the ordinance does not comply with the underwriters' rules and would affect insurance rates. It also permits signs in alleys, a condition which the city abolished after a hard fight. The ordinance places all signs under the jurisdiction of the building inspector, provides for annual inspections of electric signs, with a fee to cover the cost of these inspections, the number of lights to be used in signs of various sizes and makes signs in alleys possible.

Civic Association Plans Safe and Sane July 4

Tampa, Fla.—At the regular meeting of the Tampa Civic Association held one day last week a resolution was passed endorsing the campaign being made by the press and civic organizations of the country for a "safe and sane Fourth of July," advocating a celebration that will not endanger human life and limb in giving vent to patriotism.

Playground Work Is Taken Over by a City Commission

Worcester, Mass.—Work that is being done for the young folks of Worcester under the parental care of the municipality was shown at the meeting of the city council last week, when the ordinances were amended to provide for the appointment of a playground commission which will take over and continue the work that was started last year by the public playground association under the leadership of George F. Booth as president and Rev. Dr. John J. McCoy, pastor of St. Anne's church, as one of the prime movers. In appointing his municipal playground commission under the new ordinance, Mayor Logan showed his appreciation of the work done by the private association by making Mr. Booth a member for five years and Rev. Dr. McCoy a member for four years.

Neglected City Park is to be Beautified

Leavenworth, Kan.—After several years of neglect, the city park, Seventh and Spruce streets, is to be beautified this summer at the petition of residents of that part of town. Workmen are engaged now in repairing the fountain and raking rubbish from the place. They will plant flowers there and mount two bronze cannon souvenirs of the Civil War, given to the city by an act of Congress. Work will not stop then, according to Charles T. Cox, commissioner of parks and public property. Prisoners will keep the grass cut and keep the little triangular lot orderly through the summer.

Planning Trade School for Girls

Worcester, Mass.—The practical value of the work done by the boys in the Worcester industrial school is shown by the plans of the trustees in connection with the establishment of a trade school for girls. The trustees intend to have the new school ready for use in September if the \$6000 they have asked from the city council is appropriated.

Street Trees for Whole City Chosen

Pasadena, Cal.—The advisory committee on street tree planting has announced its last list of official street trees for every street in the city. Unless something has been unintentionally overlooked, an official tree has been designated for every street and avenue in Pasadena. The city will plant out the proper trees as fast as it can do so. In the meantime, those who wish to plant on their own account must observe the prescription.

Call Box for Sunday Mail is New System

Indianapolis, Ind.—A change in the system of Sunday delivery at the Indianapolis postoffice has taken place. Call boxes for that day have been established at the local office. This is the first postoffice in the country to try the call box system, which was suggested locally. By the new plan patrons of the office who rent "Sunday boxes" may get their mail at any time from 4 o'clock Saturday afternoon to 6 o'clock Monday morning.

Park Land Donated to City

Harrisburgh, Pa.—Mr. Isaac Freed has turned over to the Park Commission another link in the chain of river front parkway. The tract of land is 125 feet long and about 90 feet from the western line to low water mark. It is already parked to conform with the other river front parks. In 1892 Mr. Freed planted some handsome trees, and he has cared for the property every since to such good effect that it will become a part of the park system without any work being necessary by the Park Commission. Every year the property has been assessed for taxes and they have been paid by Mr. Freed. Members of the Park Commission, in announcing the gift, expressed their satisfaction with the generosity of the donor.

City Chemist's Department Inaugurated

St. Paul, Minn.—The city gas inspecting department is now a matter of municipal history, Mayor Keller having terminated its existence. At the same time he began the organization of the city chemist's department, authorized by the last Legislature. Victor Roehrich, chief gas inspector in the old department, was appointed city chemist in the new department. The work of the new department will be the testing of cement, asphalt, coal, paving and other materials used by the city in the making of public improvements. Gas and electric current used by the city will be tested, and probably street lights will be inspected. Among the first tasks to be undertaken will be the preparation of specifications for coal purchases on the B. T. U. basis, and specifications for city lighting.

City Declares Bill-Board War

Leavenworth, Kan.—The first step in what is expected to be an extended crusade against the bill-board nuisance in Leavenworth was taken before Judge Wendorff in the district court when Benjamin F. Endres in behalf of the city asked a temporary injunction against David Atchison, to restrain him from completing a board at the intersection of Fourth and Miami streets. The case was temporarily disposed of by the defendant promising to discontinue construction of the bill-board, pending the finding of another site for it. The specific reasons as set forth in the city's complaint for its cause for action were that, in the first place, the defendant had not secured a permit for the construction of the bill-board, as required by a city ordinance. Then, too, it was set forth that material being used in the work was of such inferior quality as to make the completion of the board dangerous to pedestrians.

City Will Receive War Memento

Birmingham, Ala.—Congressman Richmond P. Hobson, the hero of the Merrimac, is going to give Birmingham a conning tower. A letter has been received by the commission from Captain Hobson, in which he says the conning tower from the wrecked gun-boat Isla de Luzon, sunk by Admiral Dewey in Manila bay, is ready for Birmingham. The memento of the fearful sea battle at Manila was secured by Captain Hobson for Birmingham after it was reconstructed at Hong Kong. It is the suggestion of Captain Hobson to set the conning tower in a public place in Birmingham similar to the cannon from a battleship secured from the Cuban campaign.

City Officials Visit Adjoining Town to Inspect Playgrounds

Perth Amboy, N. J.—Accompanied by Mayor Bollschweiler, President C. C. Baldwin and Commissioners George F. Reynolds and Armin Tomaschoff, of the playground commission, visited New Brunswick recently to see what progress that city has made in the playground idea. The park commission of that city has donated a park to the playground commission about 200 by 500 feet, which is used as a playground site. Highland Park was visited where the private playgrounds of Watson Whittlesey were visited. The arrangement of the grounds attracted much admiration of the local officials and may be put into effect in this city. Next week the playground board will visit Morristown, where it is understood that considerable progress has been made with the idea. Mayor Bollschweiler, who accompanied the commissioners, is highly enthusiastic over the proposition for playgrounds in this city and stated that he would do all in his power to assist in the work.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Removal of Snow from Sidewalks—Obligations

Jefferson vs. City of Sault Ste. Marie.—It is a fact of common knowledge that a snowplow does not and cannot clear the walk in the center as well as it does at the edges where people have not trodden. A city is not liable for injuries from slipping on an icy sidewalk resulting from the fact that a snowplow belonging to the city, after passing over the walk, left a ridge of snow and ice which had become compacted by the tread of pedestrians or congealed by the dripping of water from buildings; the city being under no obligation to remove snow and ice from its streets.—Supreme Court of Michigan, 130 N. W. R., 610.

Assessments—Relevy—Laches

Byron Reed Company et al. vs. City of Omaha.—If the taxing officers of a city of the metropolitan class fail for more than ten years to relevy a special assessment after it has been adjudged invalid, or after other like assessments in the same district have been adjudged invalid for a reason that will control all the assessments levied at the same time, the delay will estop the city from relevying the assessment upon lots that have been transferred subsequent to the date the original assessment was levied, unless for some lawful reason the owner of the property is estopped to avail himself of the defense of laches.—Supreme Court of Nebraska, 130 N. W. R., 748.

Ordinance—House Moving—Electric Wires

Edison Electric Light & Power Company of St. Paul et al. vs. Blomquist et al.—St. Paul city ordinance, March 31, 1910, requiring electric light and power companies, telephone, telegraph and street railway companies at their own expense to remove or displace their wires lawfully in the street when a licensed house mover permitted to move a house through the streets requests them to do so, is invalid, in so far as it requires such companies having acquired the right to erect and maintain their poles and wires in the streets to cut or remove the same at their own expense to permit the moving of buildings, as a taking of private property for a private use.—United States Circuit Court, 185 F. R., 615.

Contracts—Power of Council

Audit Company of New York vs. City of Louisville et al.—A city had for several years owned all of the stock of a private water company which had been purchased from its sinking fund, and, as a preliminary step to the formal taking over of the property and operating it as a city department, its council by a joint resolution directed an investigation of the company and authorized the employment of experts and accountants for the purpose. Held that, although such action involved the expenditure of money raised by taxation, it was not governmental, but was the act of a proprietor with respect to property acquired for business and not governmental purposes, and that as such the delegation of authority by the resolution to the mayor and a commission to contract for the work directed to be done was within the powers of the council.—United States Circuit Court of Appeals, 185 F. R., 349.

Charter Construction—Initiative and Referendum

Rushton et al. v. Handley, City Clerk of City of Los Angeles.—City Charter of Los Angeles, permitting amendments to an initiative petition after the expiration of a certain number of days, in case the petition is found insufficient, is inapplicable to a petition to invoke a referendum with reference to an ordinance already passed, notwithstanding section 1, providing therefor, declares that the petition shall be in all respects, etc., in accordance with the provisions of the former section; and shall be examined and certified by the clerk in all respects as therein provided, since such provision refers solely to the form and substance and certification of the original petition.—Court of Appeal, California, 115 P. R., 56.

Highways—Public Easements—Right of Owner of Fees

In re Opinion of the Justices.—The public acquires an easement in the land of a highway, including a right to occupy the same for every kind of travel and communication of persons and every movement of property that is reasonable and proper in the use of a highway; but, subject to this right, the owner of the fee retains his ownership of every valuable interest in the land, and he may use it in any way not interfering with the rights of the public.

The Legislature may enlarge or limit public rights acquired in public highways, having due regard to private rights of property secured by the Constitution, and the Legislature may confer on municipalities the power to erect structures across public streets, or to permit individuals to erect structures bridging public streets; but the Legislature may not, without the consent of the abutting owners, take away any valuable right in their property, except for a public use and on compensation made.

The Legislature may authorize a municipality, owning the premises on the opposite sides of a street and the fee of the street, to erect a bridge across the street.

Where land over which a bridge across a street is to be built belongs to a private person, the bridge can be built without his consent only by paying him compensation, and then only for public purposes, as distinguished from an existing or intended use in a private business.

The Legislature may confer on any municipality the power to grant permits to individuals to erect structures which will bridge a public street connecting premises owned on both sides of the street, provided the individuals own all the land on or over which the structures are to be erected.

The Legislature may confer on any municipality the power to grant permits to bridge public streets connecting premises on opposite sides, subject to revocation at any time, and subject to the payment of rent to the municipality.

An abutting has, as against the easement acquired by the public for travel and communication, the right to have the street open for light and air, so long as there are no uses affecting his enjoyment of light and air to which the public desires to put the street, under the easement acquired by it.

Where the Legislature authorizes the imposition of an additional burden on property abutting on a public street for a different kind of public use, which will interfere with the abutting owners enjoyment of light and air, by erecting structures on or over his land within the limits of the street, he is entitled to compensation.

One has no right to have adjacent premises remain open for the admission of light and air.—Supreme Judicial Court of Massachusetts, 94 N. E. R., 849.

Covenant to Pay Public Taxes—Construction

J. W. Perry Company and John L. Roper (Plaintiffs in Error) vs. City of Norfolk, Va.—The covenant of a perpetual leaseholder with his municipal lessor to pay the public taxes which shall become due on the land embraces municipal taxes whenever they can thereafter be lawfully assessed on the land or the improvements which are part of the land, although when the lease was made the municipality had no power of taxation.—United States Supreme Court, 31 S. C. R., 465.

Taxation of Municipal Waterworks

In re Village of Delhi, Delaware County.—Though under tax law exempting from taxation the property of a municipal corporation held for public use except the part of municipal property not within the corporation, a municipality owning and maintaining a water works plant, a part of which is a tract of land partly within and partly without the corporation, is not subject to taxation on the land within its limits, but the part outside the limits is subject to taxation, an assessment of the entire tract is not void on its face, nor a manifest clerical or other error, but it is an illegal and improper assessment so far as it includes the land within the village; and hence where the municipality, with knowledge of the facts, paid the tax for several years without protest, it was not entitled to recover the taxes paid. The property of a municipality acquired and held for public use is not subject to taxation within the tax law, unless specially included.—Court of Appeals of New York, 94 N. E. R., 8731.

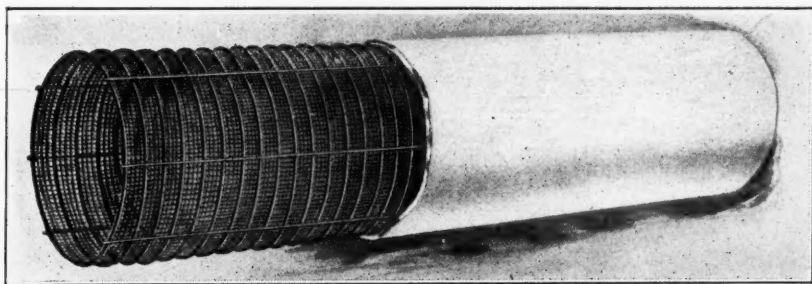
MUNICIPAL APPLIANCES

Sewer Pipe with Hy-Rib Reinforcement

The Trussed Concrete Steel Company, Detroit, Mich., manufacture a sheet steel reinforcement which may be used in the manufacture of sewer pipes and conduits. Hy-Rib is a steel sheathing stiffened by rigid high ribs. The ribs and lath are manufactured from a single sheet of steel. This re-

streets, and even more in parks, are often injured by the heat and smoke from a steam roller. The gasoline roller does no damage.

The contractor's engine made by this company is built very heavy to meet the requirements of road building, plowing up old streets and for extremely hard work. It is geared to move a trifle slower than the regular engine,



SEWER PIPE OR CONDUIT REINFORCED WITH HY-RIB

inforcement is furnished in three thicknesses of metal, represented by U. S. Standard Gauges Nos. 28, 26 and 24. Standard lengths are 6, 8, 10 and 12 feet. Four-rib Hy-Rib is bent in the shops to any desired arc of circle with radius varying from 13 inches to 20 feet. The shop-bending is said to insure absolute accuracy and smoothness of curve and avoids the necessity of expensive special field labor. In constructing a conduit or sewer a few rods, as shown in the illustration, extending the length of the conduit, should be provided to keep the Hy-Rib straight in line and as an additional safeguard against any shrinkage and temperature cracks. Either side of the reinforcement may be plastered first.

Petroleum Tractor-Roller

A COMBINATION gasoline or kerosene driven contractor's traction engine and road roller is made by the Ohio Tractor Manufacturing Company, Marion, O. The use of a petroleum product for motive power for a contractor's traction engine has an advantage as compared with steam in that the troublesome problem of supplying water for the boiler is eliminated. For use in a city as a roller or tractor it has a special advantage in that it avoids the smoke nuisance. Trees in city

has extra wide face gearing, large diameter shafts and axles, extra heavy drive wheel rims, bearings of the loose-running shafts are lined out with brass bushings, and everything is made to insure strength and long life.

The tractor-roller is the same machine as the contractor's engine. The front wheels of the machine are made regular, but are easily and quickly removed, and a roller of good weight and rigid construction, built upon its own frame, takes the place of the regular axle and wheels, thus changing the machine from a tractor to a practical roller in a short time. The maximum width of the machine in 45-horsepower size is 9 feet when 24-inch drive wheel is used. The drive wheel stands 68 inches to 72 inches and the front roller 37 inches. Weighs complete 12 tons. This is also built with an 84-inch drive wheel, the front roller standing 45 inches, and when built in 70-horsepower tractor, weighs 15 tons. With the large wheel and roller the 45-horsepower weighs 13 tons. When built from the 30-horsepower tractor, weighs 10 tons.

The general construction of the operating parts of the engine are shown in the illustration, which is of the regular traction engine. The cut shows the engine, hub, friction pulley, friction shaft and bearings of the same, the flywheel and its relation to the friction

drive and steering gear. The internal friction wheels are located and hung on pivoted bearings between the hub and rim of engine flywheel. These friction wheels transmit the power from the engine to the traction gearing. They occupy a neutral position and are brought in contact with the rim of the flywheels for the forward motion and against the hub of the flywheel for the backward motion.

Iron Fences

THE Vulcan Company, Detroit, Mich., manufacture plain and ornamental iron and steel fences, as well as other architectural iron work, in many designs. Standard designs of fence are made with extra heavy channel steel rails, into which pickets are calked by pneumatic power. This construction is much superior to the old construction of light channel rails and hand calking. Adjustable connections are provided at the ends of each panel, allowing of adjustment to meet the expansion and contraction of the metal, due to different weather conditions. These adjustable features allow of perfect alignment at all times. Adjustable center supports are placed under

the center of each standard panel of fence, making it more substantial and keeping it in line. All picket heads, rosettes and connections used in the construction of Vulcan fences are made of the best malleable iron. In selecting fences for municipal purposes, surrounding reservoirs, parks and public buildings it is desirable, for reasons of economy, to select standard heights. The height is measured from the ground to the top of the picket, allowing the fence to stand three inches from the ground.



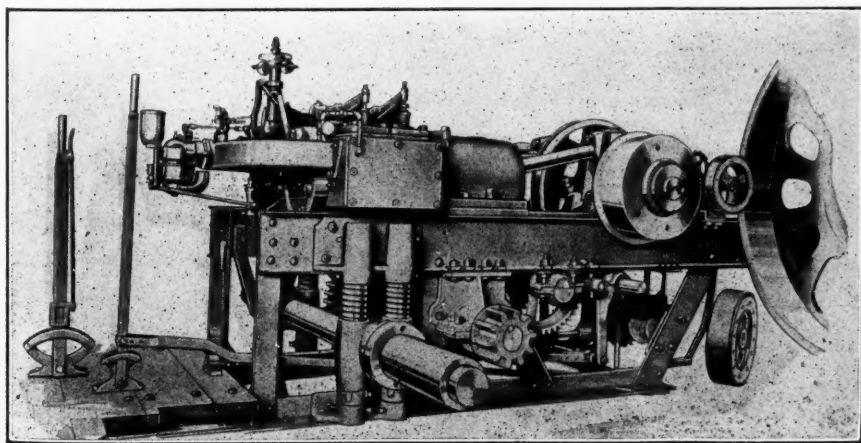
LINE POST

The illustration shows an ordinary standard picket used as a line post with a patented Vulcan foundation base. The base is connected to the picket by an adjustable brace clamp. The foundation is heavy and substantial. The picket and base have a common bed plate. This is movably attached to a table at the top of the base piece. When the picket is accurately set to line a bolt is tightened and the picket is held rigidly in place.

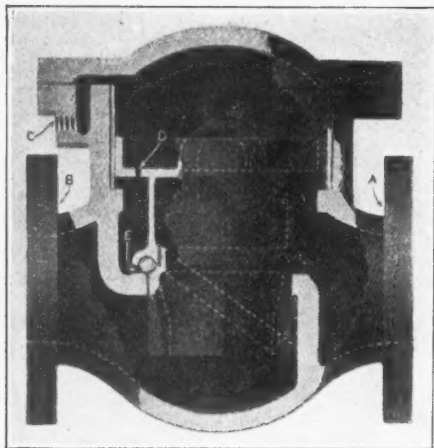
Fences made of pickets similar to that shown in the cut, where the rod is $\frac{3}{8}$ or $\frac{1}{2}$ round or square, are made in standard heights of 37, 42 and 48 inches high, when set as described. Pickets $\frac{3}{8}$ or $\frac{1}{4}$ inch in diameter, or square, are made in standard sizes of 37, 42, 48 and 60 inches in height.

Tubular fencing, suitable for bridges, with ball fittings, comprise another line of goods. They are made ordinarily with two or three rails of $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$ and $2\frac{3}{8}$ -inch diameter.

For the construction of plain or ornamental entrances for public grounds this company offers a variety of styles to harmonize with the kind of picket chosen for the fence. If cement gate posts are desired the Vulcan Company can offer a number of designs which will look well with the fence. Any good carpenter, they state, can make the forms. Gates are made to match design of fence selected. Walk gates are 3 feet 2 inches wide between posts; drive gates 8 feet 6 inches.



WORKING PARTS OF PETROLEUM TRACTOR ROLLER



VALVE FOR MAINTAINING WATER LEVEL

Paper Drinking Cups

The American Water Supply Company, 118 East Sixteenth Street, New York City, manufacture sanitary paper drinking cups. During the last year or two they have come into extended use as a result of the action of the boards of health of many states in prohibiting the use of the common drinking cup. The cups are made in folding and open patterns. They are strong and rigid, as the paper of which they are made is of a special manufacture, treated with paraffine.

Sieben Sewer Cleaner

The accompanying reproduction illustrates the work that may be done with the turbine sewer cleaner made by the Sieben System of Sanitation Company, Kansas City, Mo. The compact mass of tree roots was recently removed from a sewer in Cleveland, O., when a demonstration of the efficiency of the system was being made.

The cleaner itself consists of a nozzle supported on runners which discharges through a small turbine water motor, causing one or two sets of hook-shaped blades to revolve rapidly. The waste water carries away the dirt thus stirred up.



TREE ROOT REMOVED FROM SEWER BY SIEBEN MACHINE

Valve for Controlling Water Level

The Cleveland Steel Tool Company, Cleveland, O., has placed on the market a new valve, called the Hydromatic, for controlling the water level in standpipes, tanks, and the like. The special advantages claimed for this valve, which is made in ten sizes, ranging from one to eight inches in diameter, are the maintaining of the water level constant at all times within one inch; the elimination of leaky balance valves and the regrinding of balance valve seats; tanks are prevented from overflowing, and a saving in water is effected. The capacity is claimed to be greater than that of other valves of a similar rating, which is due to the form of its construction and the manner of its operation. The only part of the valve subjected to wear is the ring, which can be replaced without disturbing the piping in about ten minutes at a trifling cost. The illustration shows an interior view of the valve; A is the inlet and B the outlet; C is a $\frac{1}{4}$ -inch pipe through which water passes from the head chamber above the plunger to the tank when water has been drawn from the latter. Vent holes in the plunger top are located at D, and a lead or rubber gasket at E makes a tight joint between the plunger and its seat. As the copper float is lowered by the withdrawal of water from the tank, the pilot valve D is opened. This causes water to flow from the head chamber above the valve plunger through the $\frac{1}{4}$ -inch pipe C, and relieves the pressure on the upper part of the plunger enough to enable the pressure of the water entering the inlet A to force the plunger up. The flow of water through the valve into the tank then starts, and when the water level is re-established the pilot valve D closes. The pressure above the plunger is then built up through the vent holes D in the plunger top and the plunger is forced down against the gasket E and the flow of water through the valve shut off.

The valve body is of cast iron and has a removable cover plate of the same material. The brass plunger is made in two parts and the lower portion is threaded to screw into the upper one at E. The top of the plunger is piston-fitted into a brass bushing. A 5-inch seamless Hercules copper float is used in all sizes of valves, and is set at the height of the required water level inside the tank or in a casing on the outside. When mounted in this way the float casing is connected by a $1\frac{1}{2}$ -inch pipe below and a $\frac{1}{2}$ -inch pipe above. The valve is connected in the supply pipe at any distance either above or below the float.

Grapple for Handling Garbage

The Browning Engineering Company, Cleveland, O., manufacture an automatic grapple or fork which successfully handles a class of materials which have hitherto proved difficult to handle by mechanical means. Garbage, for example, has been handled by hand at many of the reduction plants in the country. Recently the Chicago Reduction Company, Chicago, Ill., has installed a Browning automatic grapple in connection with a stiff-leg derrick and hoisting engine for handling their garbage, and have, it is said, saved \$20 a day in labor thereby. One of the accompanying illustrations shows this grapple just after it has taken its load



BROWNING AUTOMATIC GRAPPLE

from the pile below. The other illustration shows the construction of the device. The Browning automatic grapple is of the two-rope type, for use in connection with locomotive cranes, derricks, overhead trolleys, etc., for the rapid and economical handling of pulp or cordwood, manure, garbage and like materials. The yoke from which the tines of the fork are suspended is a solid casting, so constructed as to allow the grapple to hang vertically under all conditions. To it is attached the opening or lowering line and a guide sheave for the closing and hoisting line. The side arms are of forged steel, with removable bushings of either tool steel or phosphor bronze at each end. The forks or tines are of cast steel, rigidly braced together at the corners by angles strongly riveted to them. The opening of the grapple is governed by a chain which is fastened to the yoke casting and is wound or unwound on the extended hubs of the drum as the closing line is drawn in or let out, thus closing or opening the device.

Indirectly the use of this grapple diminishes the nuisance of odors from garbage, by providing a means for quickly handling it. The principal cause of objectionable odors about reduction plants is said to arise from standing garbage.



BROWNING AUTOMATIC GRAPPLE LIFTING LOAD OF GARBAGE

NEWS OF THE SOCIETIES

New York State Conference of Mayors.—The second annual convention opened at Columbus Institute, Poughkeepsie, N. Y., May 25. Mayor Charles Duryee, Schenectady, opened the meeting and presented Mayor John K. Sague, Poughkeepsie, as the chairman. In his address of welcome Mayor Sague spoke of the inclination of the citizens to celebrate because of the completion of the \$50,000 guarantee fund raised for the purpose of securing industries for Poughkeepsie. The first address was by City Engineer E. A. Fisher, Rochester, who spoke on paving and care of streets. The speaker suggested as essential to proper work in paving the establishment of municipal testing laboratories. He believed that property owners should select the kind of paving and that the city at large should pay for at least 25 per cent. In repaving the city should pay a larger per cent. Regarding widths of residence streets he favored 26 feet, or if they had car tracks 38 feet. A. Prescott Folwell, editor of the *Municipal Journal*, in a paper on "Paving Policies and Modern Streets," made the suggestion that where streets are cleaned regularly municipalities should also clean the sidewalks. He contended that the sources and nature of dust are the same and equally objectionable. He further argued that the modern standards of health and comfort demand the removal of filth and slime as well as dirt and mud. In regard to the cost of paving Mr. Folwell suggested that a municipality assess on property the cost to such roadway and sidewalk paving as will be suitable for side residence streets; if more expensive paving is required because of traffic the municipality should pay the balance from its treasury.

Following Mr. Folwell's paper, Mr. W. D. A. Ryan, head of the illuminating department of the General Electric Company, discussed "Street Lighting, Artistic Modern Methods Adapted to Cities." Mr. Ryan's address was illustrated with stereopticon slides. He said that one great difficulty is to get cities to realize that there is a proper height for hanging each particular kind of lamp and that the best results cannot be obtained unless the lamps are hung at that height. "Most lamps," he said, "are hung too low. To hang a powerful light too low is positively criminal." He urged cities not to place large lights where there are no large buildings to help in reflecting the light and contended that the reverse of the proposition is equally true. Mr. Ryan emphasized very strongly the difference between the American and European light and showed that we are not one-half lighted on this side of the water. He said that the best lighting in this country is done in Minneapolis. Not that more light is used there, but because what they use is used judiciously. Conditions were studied and the lamps so selected and placed as to get the greatest amount of good.

Governor John M. Dix delivered an address on "The Attitude of the State Toward the Municipality." He spoke for municipal home rule, declaring that the theory that legislators from widely diverse sections of the State could make provisions for the control of cities in every other section was false logic. Homer Folks, secretary of State Charities Aid Association, spoke on "Budgetary Provisions for Social Work in Mu-

nicipal Life." In the evening the delegates, including the Governor and his suite, were given a sail down the river to West Point, where the Governor's salute was fired and a parade and artillery drill was witnessed.

The first paper presented at the second day's session was by Edward L. Heydecker, assistant tax commissioner, New York City, on "Municipal Taxation and Assessment." He dwelt on the deficiencies of the law, which permit municipal funds to be spent without any report being made of them. Neither the State Board of Taxation nor the Comptroller are able to get full returns. "The Social Usefulness of the Police Force" was the subject of an address by John A. Kingsbury, general agent New York Association for Improving the Condition of the Poor. He made a plea for a broader view of the duties of the policeman and said if he must carry a billy he should also wear a red cross on his sleeve. Robert L. Owen, United States Senator from Oklahoma, made an address on "Commission Government." He reviewed the history of commission government and described the reforms that had been accomplished through its agency in a number of cities.

On account of the length of the program it was found necessary to omit most of the discussions of papers which had been announced. These, however, will be printed in the proceedings of the meeting. The events of the last two days of the convention will be given in these columns next week.

New England Conference on Street Cleaning.—The second annual conference was held at the Board of Trade, Springfield, Mass., May 17. The meeting was held under the auspices of the Bureau of Social Research of Rhode Island and the Springfield Board of Trade. One of the scheduled speakers, Dr. George A. Soper, president of the Metropolitan Sewage Commission of New York, was unable to attend, but sent a telegram, which was a brief but instructive document. It was an address in 16 words covering the subject, "Some Lessons to be Learned From European Street Cleaning Methods," and read as follows: "My entire paper here follows. Experience teaches that for clean streets we must organize, systematize, deputize, energize, supervise, economize, and philosophize. With hearty wishes for a successful conference, George A. Soper." This message was read by Carol Aronovici, director of the Social Research Bureau, and was heartily applauded. Dr. Ernest Meyer, United States Census Bureau, Washington, D. C., spoke on "Uniform Methods of Accounting in Street Cleaning Work." He said that many different equations in the matter of paving, litter, amount of travel, etc., enter largely into street cleaning cost and that they should be systematized for the best results to the city. Wallace Hatch, secretary of the Rhode Island Anti-Tuberculosis Association, spoke on the "Relation Between Tuberculosis and Dust." He said that according to different authorities the relation of dust to tuberculosis was near or remote, but all agreed that it was one of the predisposing causes. Carol Aronovici spoke on "Street Cleaning in City Slums." He said that a street should be considered as more than a connecting link from one portion of the city to another, but should be looked on as an approach to a home from school, factory and workshop. Considering the

street as a part of a home, it was a gathering place, especially in the slum districts, where the street is used as a nursery, meeting place, ventilating spot and common bedroom of a district. If it is accepted that the street is the main factor in the social intercourse of the poor, the construction and care of streets implies more than the requirements of accessibility, easy grade and safety. The streets should be constructed of smooth, washable and sweepable material. He favored the system of washing streets in preference to oiling, where, he said, greasy and contaminating dust results. Speaking of refuse removal, he favored the intelligent supervision and co-operation of the police. S. H. Stone of the Boston Anti-Tuberculosis Association made an address on the relation of street dust to tuberculosis. He argued that the dust itself, even though sterile, is a dangerous irritant, lacerating the air passages and thus making them less able to resist the planting and growth of the germs when they arrive. To avoid this danger three conditions of street management were necessary. Smooth paving cleaned by flushing, a minimum height of buildings, so as not to shut out sunlight, and the immediate removal of garbage so as to minimize the danger from flies. Prof. H. A. Blanchard, Providence, R. I., gave a very practical address on "Dust and Its Prevention," in which he advocated combined sweeping and flushing.

City Marshals' and Police Chiefs' Union of Texas.—The seventeenth annual convention was held in the main auditorium of the City Hall, Fort Worth, May 17-19. President John M. Brown, Weatherford, opened the convention. He made a sensation by saying that the unwritten law and habeas corpus proceedings in criminal trials were the two great loopholes of escape for criminals. Mayor W. D. Davis made the welcoming address in behalf of the city and Walter B. Scott in behalf of the people. Former City Marshal Fred Long, Itaska, responded. Dr. Samuel P. Benbrook, Dallas, made an address on the "Positive School of Criminology," the followers of which believe that the environment of the individual has much to do with determining the matter of crime. The speaker ascribed most of the anti-social acts of the criminal to failures in their full duties of the home, church and schools.

The recent ruling of the Supreme Court in regard to the right of a Texas city to set aside a reservation was made the basis for assault by speakers before the assembly. This ruling says that it is unlawful for a city to maintain a reservation, and was the result of an appeal from the city of Dallas. The decision was severely criticised, and chiefs of police and city marshals from all the larger cities in the State made known their intention of openly defying the order.

The association decided to use its influence to bring about a reform in the manner of handling the juvenile offenders against law or those juveniles who are waifs.

Henry De Spain, Sherman, was elected president; vice-presidents, Police Chief Hollis Barron, Waco; John R. Snyder, Amarillo, and W. L. Sallis, Brenham; M. T. Forrest, Houston, continues as secretary and treasurer; Charles W. Newby, Fort Worth, was elected assistant secretary. San Angelo was selected as the next meeting place.

International Association of Chiefs of Police.—Major Richard Sylvester, as president of the association, has called a meeting of the board of governors of the National Bureau of Identification to be held in Washington, D. C., June 10. The members of the committee are Frank J. Cassada, Elmira, N. Y.; John T. Janssen, Milwaukee, Wis.; Col. William Young, St. Louis, Mo.; William A. Pinkerton, Chicago; John B. Taylor, Philadelphia, Pa.; J. J. Donahue, Omaha, Neb.; T. A. McQuaide, Pittsburg, Pa.; T. F. Farnan, Baltimore, Md.; J. J. Downey, Detroit, Mich.; J. W. Reynolds, New Orleans, La., and Major Sylvester.

The meeting of the board will be held in the office of Major Sylvester at police headquarters, and a social session will follow the meeting. Members of the board will go from here to Rochester, N. Y., where they will attend the annual meeting of the International Police Association, June 13.

It is expected that there will be a large attendance at the convention in Rochester, Major Sylvester, as president, having already been assured by many members of the association that they will be in attendance.

Washington Society of Engineers.—Members of the society made a trip of inspection to the concrete dam and generating station at McCalls Ferry, Pa., May 21. The party went by special train to Baltimore, where they were joined by a delegation of the Engineers' Club of that city. Local members from both cities of the American Institute of Electrical Engineers also took part in the excursion.

National Fire Protection Association.—The fifteenth annual meeting was held at the Waldorf-Astoria, New York City, May 23. According to reports presented, the fire waste of this country so far this year is \$16,000,000 more than the average, and 1911 is the most disastrous year since that of the San Francisco catastrophe. The average yearly fire waste has jumped to \$250,000,000.

H. L. Phillips, chairman of the Committee on Resolutions, presented the appeal to the public in the form of resolutions which were adopted promptly as well as unanimously. The appeal is:

"The National Fire Protection Association, with all the force at its command, wishes to place before the public in the strongest possible terms that the situation in connection with the fire waste is becoming so acute that there is necessity for action.

"Action by all cities and towns in adopting proper building codes, which will call for improved conditions and the use of fire resisting construction in congested districts.

"Action by the State and municipal authorities covering the regulation of the transportation and storage of inflammable oils and explosives.

"Action by those in authority to the end that all buildings where people congregate, such as schools, theatres, factories and hotels, shall be so constructed and equipped that the lives of persons within them will be safeguarded.

"Action by the proper authorities requiring the introduction of automatic fire extinguishing apparatus in all commercial establishments and city blocks.

"Action by the proper authorities prohibiting the manufacture and sale and use of the snap match, and requiring the universal adoption and use of the safety match.

"Action by the public in bringing about a safe and intelligent celebration of Independence Day; and, above all

"Action by every citizen of the land in using his individual effort in the cause of educating the public in regard to the dangers from fire, not only in so far as it applies to the personal and immediate consideration, but also from the broader standpoint, namely, that of the welfare of our land.

"For the adoption of these principles for which it stands the National Fire Protection Association asks immediate action."

Calendar of Meetings

May 29-June 2.
National Electric Light Association.—New York City.—T. C. Martin, Secretary, 31 West 39th St.

June 5-14.
National Probation Officers' Association.—Boston, Mass.—Roger N. Baldwin, Secretary, 903 Security Building, St. Louis, Mo.

June 6-8.
Engineers' Society of Pennsylvania.—Annual Meeting at State College, Pa.—E. R. Dasher, Secy., P. O. Box 704, Harrisburg, Pa.

June 6-10.
American Water Works Association.—Thirty-first Annual Convention, Powers Hotel, Rochester, N. Y.—John M. DiVen, Secretary, 14 George street, Charleston, S. C.

June 7-14.
National Conference of Charities and Correction.—Boston, Mass.—Alexander Johnson, Secretary, Ft. Wayne, Ind.

June 7.
National Association for the Study and Prevention of Tuberculosis.—Denver, Col.—Dr. Livingston Farrand, Executive Secretary, 105 East Twenty-second street, New York City.

June 8-10.
National Association of Comptrollers and Accounting Officers.—Annual Convention, Arlington Hotel, Washington, D. C.—George M. Rex, Secretary, 525 Industrial Trust Building, Providence, R. I.

June 11-16.
International Association of Chiefs of Police.—Eighteenth Annual Convention, Rochester, N. Y.—Major Richard Sylvester, Superintendent of Police, Washington, D. C., President.

June 13-18.
New York State Association of Chiefs of Police.—Annual Convention, Rochester, N. Y.

June 13-16.
American Society of Civil Engineers.—Annual Convention, Chattanooga, Tennessee.—Charles Warren Hunt, Secretary, 220 West 57th St., New York.

June 21-22.
National Conference of Poor Law Officials.—Boston, Mass.—Dr. Robert W. Hill, President State Board of Charities, 105 East Twenty-second street, New York City.

June 22-24.
Intermountain Good Roads Association.—Annual Convention, Pocatello, Ida.—Caleb Tanner, State Engineer.

June 28-29.
South Carolina Water Works Association.—Meeting for Organization, Columbia, S. C.—W. F. Steiglitz, Temporary Secretary, Columbia, S. C.

June 28-30.
International Association for the Prevention of Smoke.—Annual Convention, Newark, N. J.—R. C. Harris, Secretary, City Hall, Toronto, Ont.

August 15-18.
Firemen's Association of the State of New York.—Watertown, N. Y.—A. H. Otto, Secretary.

September 12-15.
International Association of Municipal Electricians.—Annual Convention, St. Paul, Minn.—Clarence R. George, Secretary, Houston, Tex.

September 18-30.
International Municipal Congress and Exposition.—Chicago, Ill.—Curb M. Treab, Secretary, Great Northern Building, Chicago, Ill.

September 19-22.
International Association of Fire Engineers.—Annual Convention, The Auditorium, Milwaukee, Wis.—James McFall, Secretary, Roanoke, Va.

September 19-22.
American Hospital Association.—New York City. J. N. E. Brown, M.D., Secretary, Toronto General Hospital, Can.

September 24-30.
International Congress on Tuberculosis.—Rome, Italy.—Professor Ascoli, Secretary-General, Via Lucina, Rome, Italy.

September 26-29.
American Society of Municipal Improvements.—Grand Rapids, Mich.—A. Prescott Folwell, Secretary, 239 West Thirty-ninth street, New York City.

October 4-6.
League of American Municipalities.—Annual Convention, Atlanta, Ga.—John MacVicar, Secretary, Des Moines, Ia.

November 13-17.
National Municipal League.—Annual Meeting, Richmond, Va.—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

PERSONALS

ALVORD, E. B., was elected Mayor of Henderson, Tex.

BECK, HARRY N., has been appointed City Engineer of Muskegon, Mich.

BELLIS, ROGER, has been elected Mayor of Hyattsville, Md.

BEMIS, EDWARD W., of New York, has been appointed appraiser to make the valuation of Toledo Rail-Light property in connection with its being taken over by the city.

BETZ, CHARLES, has been appointed Superintendent of Streets of Belleville, Ill. BLISS, GEO. N., is the new Mayor of Port Arthur, Tex.

BROWN, T. C., has been elected Mayor of Tazewell, Va.

BUCK, H. M., of Waukesha, has been elected president of the Wisconsin Gas Association for the ensuing year.

CAREY, FRANCIS K., has resigned as head of the City Plan Commission of Baltimore.

CONAWAY, JAMES C., is the new Mayor of Grass Valley, Cal.

CURTIS, DR. HENRY S., has recently visited Dallas, Tex., in the interest of the playground movement.

FOOTE, JOHN, has been appointed assistant city engineer of Little Falls, N. Y.

GRANT, WHIT M., is the new Mayor of Oklahoma City, Okla.

HAYNES, ROWLAND, field secretary of the Playground Association of America, has just paid a visit to Erie, Pa., where he gave illustrated talks in the interest of playgrounds.

KIRBY, E. N., is the new Mayor of Abilene, Tex.

MANDELL, T. H., has been re-appointed City Engineer of Lake Charles, La.

MCKENZIE, RODERICK, has been appointed by the Mayor as a member of the Board of Public Works of Salt Lake, Utah.

NIEDHAM, MRS. MABEL R., has been appointed secretary of the Board of Park Commissioners of Indianapolis, at a salary of \$1,200 a year, succeeding Leroy E. Snyder, who resigned to become secretary of the Indianapolis Trade Association.

O'CONNOR, THOMAS, the oldest fire chief in the United States, both in point of service and age, committed suicide recently following an illness which seized him several months ago. He became head of the New Orleans Fire Department in the spring of 1869, and has served in that capacity ever since. He was 72 years of age.

RANKIN, J. E., is the new Mayor of Knoxville, Tenn.

ROBINSON, CHARLES M., will shortly visit Binghamton, N. Y., to work on the new city plan system fathered by the Mercantile Press Club that is to be inaugurated.

SMITH, FRANCIS V., chemical engineer of New York City, has just completed an investigation of the asphalt pavements of Syracuse, N. Y.

STOWASSER, W. H., has resigned as Mayor of Barbourville, W. Va.

VELLA, T. C., who was recently appointed Chief of Police of San Bernardino, Cal., has been obliged to resign, as he is not a citizen of the United States.

WHIPPLE, GEORGE C., New York, N. Y., Consulting Engineer, who has been appointed Professor in the sanitary engineering department, Harvard University, will retain his present office, 103 Park avenue, New York City, and continue to carry on his work as Consulting Engineer.

WILSON, DR. C. S., has been appointed City Bacteriologist of Tacoma, Wash.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago: Inquiries are good and a number of municipal contracts are pending. Prices are firm. Quotations: 4-inch, \$25.50; 6 to 12-inch, \$24.50; 16-inch and up, \$24. Birmingham: The demand and general inquiry are reported good. Quotations: 4 to 6-inch, \$22.50; 8 to 12-inch, \$22; over 12-inch, average, \$21. New York: Inquiries are good and large municipal contracts are pending. Quotations: 6-inch, car loads, \$21 to \$22.

Lead.—Lead is weaker and demand is light. Quotations: St. Louis, 4.25c.; New York, 4.375c.

Valves.—The Chapman Valve Manufacturing Company, Springfield, Mass., has carried through its plan of financial reorganization. A new corporation has been organized under the same name, with the exception that a "the" has been introduced before the corporation title. The nominal capital stock is reduced from \$1,300,000 to \$1,000,000, but the actual cash capital is \$200,000 greater. Of the shares \$500,000 are 7 per cent cumulative preferred and an equal amount common stock. The incorporators are members of the old board, namely, Adolph W. Gilbert, Edwin A. Carter, George B. Holbrook, Dwight O. Gilmore and William C. Godfrey.

Auto Combination Wagon.—One of the American Fire Apparatus Company's auto chemical and hose wagons was exhibited at Westfield, N. J. Frederick Bryant, 1 Madison Avenue, New York City, accompanied the car and gave Fire Commissioner Hohenstein, Chief Dicher, Assessor Appley and representatives of the press a good demonstration of the machine.

Rapid Pipe Laying.—Forty-three miles of pipe, ranging from 2 to 12 inches in diameter, have been installed in San Leandro and the district recently annexed to Oakland, Cal., within the last six months by the Bay Cities Water Company, a subsidiary corporation of the United Properties Company. This achievement, involving an expenditure of almost \$500,000, has never, according to Manager Charles E. Gilman, been duplicated in any city in the United States of a similar size and in the same given time. So quietly has the company worked that it is not generally known that such progress has been made. Two hundred and fifty carloads of pipe will arrive in Oakland from the East within the next three months, and is to be installed from Seventy-sixth avenue, the street to which the system is now built, to Lake Merritt, completing the entire annexed district and East Oakland. This work will also cost close to half a million dollars. Sufficient revenue is now being taken in by the new company to pay the expenses of the office force in the First National Bank Building. This money is being taken in through the service to 1,250 residences in which the Bay Cities Company has installed pipe and meters. Although the new company invaded the local field less than a year ago, it is delivering on an average 750,000 gallons of water daily, secured from artesian wells at Roberts' Landing, near San Lorenzo, where the auxiliary plant is located. It is claimed that new customers are being secured at the rate of 25 a day.

Large Order of Motor Engines.—The Seagrave Company, Columbus, O., has received, through President Culpepper Exum, of the Board of Commissioners, Birmingham, Ala., an order for nine motor-propelled combination chemical and hose fire wagons. In addition to the nine wagons ordered, it is the ultimate intention of President Exum and Fire Chief Bennett to order nine additional wagons of the same type. The city will have, when the nine arrive, 12 Seagrave wagons, two Webb wagons and one fire engine, auto-propelled.

New York Fire Alarm Boxes.—The New York Fire Department recently awarded a contract for 150 fire alarm boxes to the Star Electric Company. The contract was awarded after a careful investigation, from which the following is quoted. As the competition was principally between the Star and Gamewell boxes, the report regarding the other boxes on which bids were made is omitted. J. C. Rennard, electrical engineer of the Fire Department, says:

"In accordance with the conditions of the specification and the resolution of the Board of Estimate and Apportionment, a test of the boxes submitted by the companies bidding was conducted at Fire Department Headquarters by the Chief Engineer of the Board of Estimate and Apportionment and the Fire Commissioner on March 20, 1911. At this test were present: Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment; John C. Rennard, Electrical Engineer, Fire Department; George F. Sever, Consulting Electrical Engineer, Department of Water Supply, Gas and Electricity; Otto Klein, Chief Engineer of the Commissioner of Accounts; George L. Foote, Henry G. Pierson, representing Foote, Pierson & Company; C. E. Beach, G. E. Morley, representing Star Electric Company; A. H. Cross, F. W. Cole, representing Gamewell Fire Alarm Telegraph Co.

"The test consisted in a practical demonstration of the operation of the various boxes under conditions simulating actual service, and in a detailed examination of the mechanism of each box by the Committee with the assistance of the experts of the manufacturers.

"A further examination and test was made on March 27 at Fire Department Headquarters by Messrs. Lewis, Rennard and Sever. As a result of these tests the following conclusions are drawn:

"1. That the boxes submitted by the Gamewell Fire Alarm Telegraph Company and the Star Electric Company are non-interfering and successive and fulfil the conditions of the specification.

"2. That the successive feature of the Gamewell box is limited in that if more than four boxes on the same circuit are pulled at the same time not more than three or four boxes will transmit their signals. The Star Electric Company box will transmit its signals in succession up to the limit of the spring power, which in the box under test was thirty-six rounds of the circuit wheel, thus permitting nine boxes to be pulled together on the same circuit when each box in succession would send in a complete signal.

"3. That the Star Electric Company

box sends in signals with less loss of time than the Gamewell box in that it tests the circuit after every round of the circuit breaking wheel, whereas the Gamewell box tests the circuit only after every fourth round of the circuit breaking wheel, thereby causing a possible delay of the time required for three complete revolutions of the circuit wheel.

"4. The circuit breaker contacts in the Star box are mechanically snapped open and closed, giving an efficient sliding contact. On the Gamewell box the circuit breaker contacts are opened by the straightening of a flat spring which is bent by a tooth of the circuit wheel to make contact with another flat spring for closing the circuit. Practically no sliding movement is caused in this contact.

"5. The circuit breaker contacts of the Star boxes are normally open when the box is shunted out and are not liable to weld together by the passage of an abnormal current. On the Gamewell box this circuit-breaking contact is closed when the box is shunted out and the passage of a current may weld them together and thus prevent the further operation of the box.

"6. The Star box will properly operate on an increase of current that will make the Gamewell box interfering.

"7. If the Gamewell box is pulled on an open circuit it will run for about two minutes and stop, having, of course, not transmitted its signal. If the circuit should be closed immediately after the two-minute period still no signal would be received from this box. The Star box if pulled on an open circuit will not run at all until the circuit is closed, and will then send in its signal. This is considered an important advantage in that the circuit might easily be opened for a period of two minutes, due to a change being made in a cable or the replacing of a blown fuse, and while the length of time the circuit is open would be known there would be no indication of a Gamewell box having been pulled during this time. If the Gamewell box is allowed to run down from lack of winding, it may leave the circuit open, and, therefore, inoperative, until the box is rewound. If the Star box is allowed to run down it will mechanically close the circuit before stopping.

"8. The mechanism of the Star box is more complicated than the Gamewell box, and is so of necessity, because it accomplishes more. It is not believed, however, that the Star box is more difficult to maintain than the Gamewell box in actual practice. Each box is sufficiently complicated to practically require removal to a shop for any material repairs.

"9. The component parts of the mechanism of each box are well and substantially made and the adjustments are all practical.

"10. Both of these boxes have been tried in actual service a sufficient length of time to demonstrate practicability for operation under the conditions named.

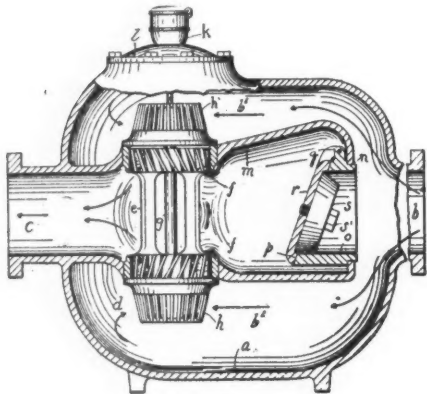
"11. Both boxes will operate in connection with the apparatus now installed in the Fire Alarm Telegraph central offices of the city of New York.

"For the above conclusions the Committee unanimously recommend the acceptance of the bid of the Star Electric Company, who are also the lowest bidders for the fire alarm boxes complying with the specification requirements."

PATENT CLAIMS

992,954. **WATER METER.** Ernest E. Gamon, Newark, N. J. Serial No. 496,851.

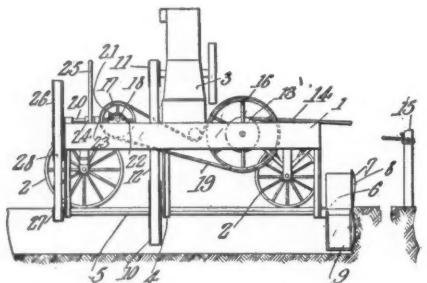
In a water meter, the combination with a main casing having inlet and outlet spuds, upper and lower receiving chambers and an intermediate supplemental chamber, propeller wheels mounted in said supplemental chamber for measuring the



flow of water therethrough under normal conditions and automatic means inserted in said supplemental chamber for permitting direct communication between said spuds and supplemental chamber under abnormal conditions when the difference in pressure between said spuds reaches a certain predetermined point.

992,866. **DITCHING MACHINE.** Horace G. Francis, Dexter, Mo., assignor, by direct and mesne assignments, of one-half to Emmett S. Wills and one-fourth to James K. Robinson, Dexter, Mo. Serial No. 561,632.

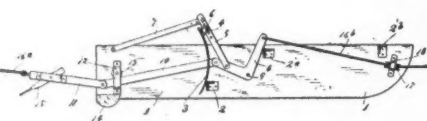
A ditching machine comprising a frame mounted at its end portion upon supporting wheels, an engine mounted upon the frame at a point approximately midway between the ends thereof, hangers depending from said frame, a shaft journaled in said hangers and at its end portions pro-



jecting beyond the ends of the frame, a cutter mounted upon the forward projecting end of the shaft, means operatively connecting the engine with the shaft at an intermediate point thereof, a winding mechanism mounted upon the forward portion of the frame, and a reducing gear operatively connecting the winding mechanism with the rear projecting end portion of said shaft.

991,665. **SCRAPER FOR CLEANING LAKE AND RIVER SHORES.** Charles W. Stubbs, Maple Plain, Minn. Serial No. 589,718.

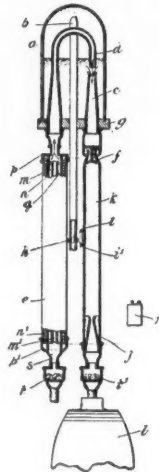
In a device of the kind described, the combination with a carriage and a scraper mounted for movements thereon to and from operative position, of connections for moving said carriage to and fro on a dis-



tant point including means for automatically throwing said scraper into operative position when said carriage is drawn in one direction and for throwing said scraper into inoperative position when said carriage is drawn in the other direction.

992,980. **OZONE-PRODUCING APPARATUS.** Octave Patin, Paris, France. Serial No. 454,260. Divided. Serial No. 584,434.

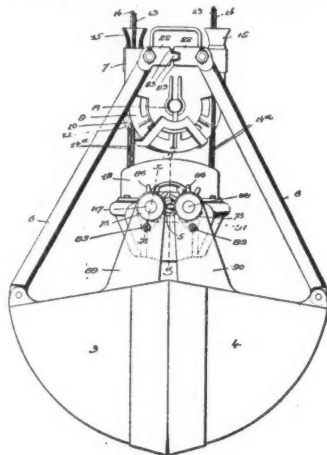
An ozone apparatus comprising two con-



centrically positioned tubes having an annular space therebetween, an electrode positioned within the inner tube, and a second electrode formed of a coil of wire, said coil being wound spirally upon the outer tube.

992,799. **HOISTING BUCKET.** Almon E. Norris, Cambridge, Mass. Serial No. 346,380. Renewed Sept. 29, 1910. Serial No. 584,575.

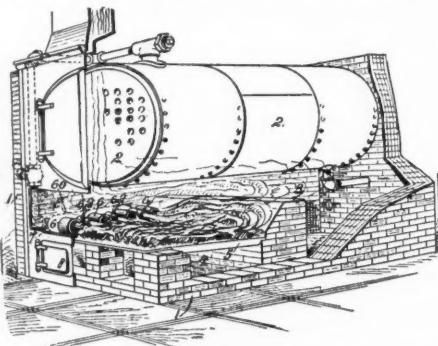
In a bucket, the combination with two bucket segments, of a head to which said



bucket segments are secured, three axially aligned sheaves carried by the head, a holding rope passing around one sheave, and an opening-and-closing rope passing around the other sheaves.

993,148. **SMOKE CONSUMER.** George Bromm, Saginaw, Mich., assignor of one-third to John Dengler and one-third to John L. Schwab, Saginaw, Mich. Serial No. 598,893.

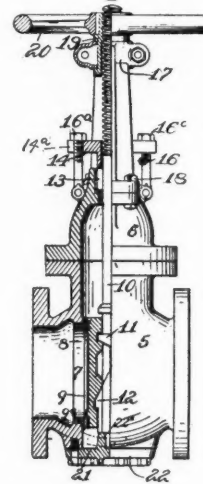
The combination with the furnace, of a smoke consuming attachment comprising a main flue having a series of smoke flues projecting through the side wall of the fur-



nace, said flues being projected at right angles from the main flue, a series of supplemental nozzles that project from the upper edge of the flue and incline downwardly with respect to the smoke flues and blower devices that enter the main flue and eject into the supplemental nozzles thereof.

992,933. **GATE VALVE.** Frederick R. Banks, Paterson, N. J. Serial No. 576,589.

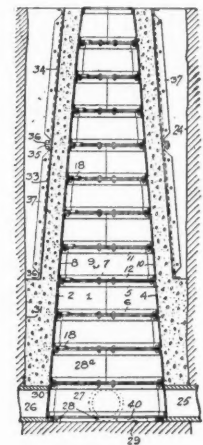
In a gate valve, a casing having valve seats therein, disk valves co-operating with said seats, a rod independent of the valves and having projections thereon engaging with the valves to open and close



them, detachable means for moving the rod, said casing having an opening in its bottom in line with said valves and rod and through which the same may pass, and a removable cover for closing said opening to the casing.

992,782. **FORMING CONCRETE MANHOLES.** Charles S. Lambie, Wilkesburg, Pa. Serial No. 572,026.

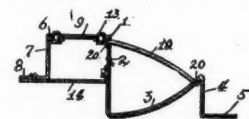
The herein described method of forming concrete manholes, consisting in supporting within the excavation a form composed of downwardly flaring sectional annular shells



by means of a removable support, molding the concrete around the form, removing the support and dropping the lowest sectional annular form into the space so provided, separating it into sections and removing the sections upwardly from the manhole and dropping and removing the other annular shells in the same way.

993,244. **METALLIC CURB AND GUTTER.** George W. Hanbrough, San Francisco, Cal. Serial No. 549,669.

In curb and gutter structures, a metallic plate fashioned to present in cross section a vertical inner wall having an offset top flange, a gutter floor, an outer abutment wall and an outer retaining flange for the adjacent edge of the pavement to rest upon; in combination with a second plate



fashioned to present in cross section a laterally extending base-retaining part, a vertical wall and a top flange; and a top resting upon and removably secured to said top flanges of the vertical walls of the respective plates, and constituting with the first and second mentioned plates a curb.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio	Archbold	June 2	Imp. Defiance st., by grad., drain, curbing and paving	Ora E. Lauber, Village Clerk.
New Hampshire	Concord	June 2, 1 p.m.	Furn. trap rock, estimated about \$4,500	H. C. Hill, State Engr.
Ohio	Cincinnati	June 2	Improving Crookshank Road in Green township	F. Driehs, Clk. Bd. Co. Comrs.
Iowa	Mt. Pleasant	June 2	Paving 10,710 sq. yds. with brick, asphalt filler, 6-in. conc. base	City Clerk.
Pennsylvania	Altoona	June 2, 3 p.m.	Resurfacing about 83,000 sq. yds. of block & sheet asphalt pave.	W. J. Hamor, City Clerk.
New York	Olean	June 2, 8 p.m.	Constr. about 6,678 sq. yds. of vitrified wire-cut brick pavement on concrete foundation. About 3,960 lin. ft. stone curbing.	John H. Gaynor, City Engr.
New York	Troy	June 2, 11 a.m.	Regulating, grading, curbing, and paving por. of Fourth st.	James M. Riley, Secy. B. C. & S.
Tennessee	Knoxville	June 2, noon	Paving, curbing, guttering and grading various streets	W. P. Chandler, Recorder.
New Jersey	Roselle	June 2, 8 p.m.	Improving Chestnut St., about 2,330 ft., by macadamizing, laying concrete combination curb and gutter.	Jacob L. Bauer, Boro. Engr.
Maryland	Frostburg	June 3, 2 p.m.	Grading and paving 1,319 ft. of Grant street	Wm. Harvey, City Engr.
New Jersey	Laurel Springs	June 3	Construction concrete sidewalk in Washington Avenue	Sam'l L. Burgess, Township Clerk
Pennsylvania	Franklin	June 3, 7 p.m.	Paving various streets	City Clerk.
Ohio	Willoughby	June 5, noon	Grading, paving and curbing Euclid St.	C. C. Jenkins, Village Clerk.
New York	Newburgh	June 5, 5 p.m.	Paving portion of Grand street with sheet asphalt, bitulithic, wood block or Hassam pavement, consisting of 25,630 sq. yds. pavement and 11,500 lin. ft. curb, inlet basins, catch basins, manholes, etc.	
Indiana	Portland	June 5, 3 p.m.	Constr. and improv. public hwy. in Bear Creek township.	Max E. Bastian, Jr., Supt. Sts.
Indiana	Rensselaer	June 5, 3 p.m.	Constructing 5 stone roads in Keener township.	W. Lea Smith, County Auditor.
Pennsylvania	Steelton	June 5, 7:30 p.m.	Sub-grading, paving and curbing portion of Second street	J. N. Leatherman, County Aud.
Kansas	Marion	June 5	Paving, curbing and otherwise improving Third Street	Chas. D. Feidt, Boro. Secy.
Connecticut	Bridgeport	June 5	Paving State Street	Mayor.
Pennsylvania	Arnold	June 5, 8 p.m.	Grading and curbing portion of Kenneth ave.	City Clerk.
Michigan	Portland	June 5, 7:30 p.m.	Constructing brick pavement in various streets	G. B. Campbell, Boro. Engr.
Alabama	Gadsden	June 5	Constr. 4,377 sq. yds. concrete sidewalk; 200 sq. yds. concrete driveway; 2,073 lin. ft. granite curb; 685 lin. ft. curb & gut.	Richard Bates, Village Clerk.
Alabama	Northport	June 5	Constructing 800 sq. yds. concrete sidewalks	Chas. L. Marsh, City Engr.
New Jersey	Irvington	June 5, 8 p.m.	Grading, flagging and curbing laying telford pavement in var. st.	A. A. Kirk, Mayor.
Kansas	Lawrence	June 5	Grad., pav. with vit. brick curb. and gutter. various streets	M. Stockman, Town Clerk.
Iowa	Harlan	June 5	Paving about 15,000 q. yds.	F. D. Brooks, City Clerk.
New Hampshire	Portsmouth	June 5, noon	Paving with brick block about 11,050 sq. yds.; paving with granite block about 3,200 sq. yds.; 14,250 q. yds. concrete base; 14,250 sq. yds. roadway excavation; 2,050 lin. ft. curb.	O. F. Graves, City Clerk.
Maryland	Annapolis	June 5, noon	Paving two streets with bit. mac. grad. set. curbs, etc.	J. E. Parker, Supt. Public Works.
Indiana	Williamsport	June 5, 1 p.m.	Constr. a gravel road in Kent Civil township	J. C. Little, City Engr.
Indiana	Vernon	June 5, 11 a.m.	Constructing a pike road in Vernon township	David H. Moffett, County Auditor
Indiana	Greensburg	June 5	Constructing a macadamized road in Clay township	M. W. Brogan, County Auditor.
Indiana	Salem	June 5	Constructing a road in Washington township	Frank E. Ryan, County Auditor.
Indiana	English	June 5, 2 p.m.	Constructing a pike road in Jennings township	Frank S. Munkelt, County Auditor.
Indiana	Washington	June 6, 2 p.m.	Constr. 3 gravel roads in Bogard and Madison townships	Jas. N. Leatherman, County Auditor
Indiana	Winamac	June 6, noon	Improving two public highways in Pulaski County; 2 gravel roads in Beaver township	Thos. Nugent, County Auditor.
Indiana	Noblesville	June 6, 2 p.m.	Constructing a gravel road in White River township and macadam road in Jackson township	W. E. Munchenburg, County Audr
Indiana	Bedford	June 6, 1 p.m.	Constructing 8 gravel or macadam roads	Geo Griffin, County Audr
Indiana	Petersburg	June 6, 2 p.m.	Constr. a gravel road in Patoka township	Extra W. Edwards, County Audr
Indiana	Bloomfield	June 6, 2 p.m.	Constructing a macadam road in Taylor township	John D. Gray, County Auditor.
Indiana	Valparaiso	June 6, noon	Constr. a macadam road in Pleasant township	Caswell H. Jennings, County Audr.
New Jersey	Trenton	June 6, 8 p.m.	Grading certain sections of Riverside Drive	C. A. Blachly, County Auditor.
South Carolina	Charleston	June 6, noon	Filling about 13,000 cu. yds. American and Immigration Sta. sts.	Street Committee.
Indiana	Logansport	June 6, 10 a.m.	Constr. a gravel road in Jefferson twp. and macadam roads in Jackson, Harrison and Tipton townships	J. H. Dingle, City Engr.
Indiana	Princeton	June 6, 10 a.m.	Improving several public highways	J. E. Wallace, County Auditor.
Indiana	Brazil	June 6, 11:30 a.m.	Constr. a stone and gravel road in Harrison twp. and a gravel road in Sugar Ridge township	W. T. Roberts, County Auditor.
Indiana	Paoli	June 6, 2 p.m.	Constr. 3 gravel roads in Orange County	Edgar A. Staggs, County Auditor.
Indiana	Crown Point	June 6, noon	Constructing various gravel roads in Lake County	A. V. Hamis, County Auditor.
New Jersey	Cape May	June 6	Constr. seashore road from Seaville to Beesley's Point	Chas. A. Johnson, County Auditor.
Indiana	Wabash	June 6, 1 p.m.	Constr. a gravel road in Chester township	Bd. County Comrs.
Indiana	Indianapolis	June 6, 11:30 a.m.	Constr. stone and gravel roads in Harrison & Sugar Ridge twp.	J. P. Nofitzges, County Auditor.
Pennsylvania	Sharon	June 6, 5 p.m.	Paving about 1,900 sq. yds. on Oakland ave.	Edgar A. Staggs, Audr. Clay County
Indiana	Kokomo	June 6	Constr. about 9 mi. of gravel road in Jackson & Liberty twps.	Oscar J. Denny, Boro. Secy.
Indiana	Rushville	June 6	Constr. 6,659 ft. of macadam road in Jackson twp.; and 7,523 ft. of macadam road in Posey and Jackson twps.	A. B. Easterling, County Auditor.
Indiana	Vincennes	June 6	Constr. 2 gravel roads in Busseron twp., in all 11,600 ft. long; and a gravel road in Vincennes twp. 2,295 ft. long	Jesse M. Stone, County Auditor.
Indiana	Monticello	June 7, noon	Construct. a rock road on County line bet. White & Carrol Cos.	County Commissioners.
Indiana	Bloomington	June 7, 10 a.m.	Improving a highway in Bloomington township	A. G. Fisher, County Auditor.
Florida	Jacksonville	June 7, 10 a.m.	Constructing Fernandina road, estimate cost \$78,942	Horace Vlakely, County Auditor.
Maryland	Baltimore	June 7, 11 a.m.	Constructing roadway and paths in Wyman Park, grading, scarifying, constructing storm drains; laying fibre conduit; constructing light post foundations, retaining wall.	Gail L. Barnard, County Engr.
Ohio	Struthers	June 7, 2 p.m.	Grading and macadamizing about 2 miles of road	Wm. S. Manning, General Supt.
Indiana	Lafayette	June 8, 10 a.m.	Constructing and improving various gravel roads in Tippecanoe County	W. J. Maurice, township Clerk.
Indiana	Mt. Vernon	June 8, 2 p.m.	Constr. a 2 mile gravel road in Marrs township; 1-mile road and 3,520 ft. gravel road in Lynn township; 3,335 ft. of gravel road in Center township; and 12 miles of work in Smith twp.	Geo. W. Vaxter, County Auditor.
Wisconsin	Racine	June 10, 10 a.m.	Paving por. of Water street, consisting of about 2,642 sq. yds. brick paving	Paul Maier, County Auditor.
Minnesota	Biwabik	June 10, 8 p.m.	Constructing about 2,000 lin. ft. curb and gutter	P. H. Connolly, Chm. Bd. Pub. Wks.
North Dakota	E. Grand Forks	June 12	Laying about 21,000 sq. yds. of pavement, est. cost \$61,500	J. E. Riley, Village Clerk.
Pennsylvania	Ridgeway	June 12	Constr. 2,500 cu. yds. excavation; 7,000 sq. yds. paving and 5,600 lin. ft. curb	City Clerk.
Minnesota	Virginia	June 13, 8 p.m.	Paving various streets	F. W. Ward, Boro. Engr.
Alabama	Montgomery	June 13, noon	Paving with brick, asphalt, bitulithic or wood block various streets, also necessary curbs, gutters and storm water drains.	City Clerk.
New Jersey	Atlantic City	June 13	Constr. Schillinger or Hexagon block sidewalks in var. streets	Robert Tait, City Treasurer.
Ohio	St. Bernard	June 14, noon	Paving Massachusetts and other avenues	Rightmire, City Engr.
			Constructing artificial stone sidewalks on Beech St. and Spring Grove avenue	Geo. Schroeder, City Clerk.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS Continued)				
New Jersey	Camden	June 14, 11 a.m.	Resurfacing the Camden and Westfield Turnpike, material to be applied by the ton, consisting of about 4,065 tons asphalt concrete, 3,677 tons 1½-in. stone, 3,465 cu. yds. gravel.	J. J. Albertson, County Auditor.
Indiana	Winamac	June 15, noon	Constructing a highway on line bet. Pulaski & Starke Counties.	Wm. E. Munchenburg, County Aud.
Tennessee	Chattanooga	June 15, 1 p.m.	Improving various streets, consisting of about 32,000 sq. yds. paving; 19,000 lin. ft. concrete curb and gutter.	E. D. Bass, Chm. Road Com.
New Jersey	Elizabeth	June 15, 8:30 p.m.	Paving various streets with brick, asphalt and trap rock, setting curbs and gutters.	N. K. Thompson, Street Comr.
Ohio	Cincinnati	June 16, noon	Improving the Loveland and Madeira road; constructing culvert and approaches on Betts ave. in Springfield township.	Stanley Stuble, Pres. Bd. Co. Comrs
New York	White Plains	June 19	Constr. a ten foot center strip of macadam asphalt in portion of Church street.	John J. Brown, Pres. Bd. Trustees.
Tennessee	Springfield	June 20, noon	Grading, ditching and macadamizing about 50 miles of public roads in Robertson County.	Jos. E. Washington, Chm. Bd. Co. C.
SEWERAGE				
New York	Fort Hamilton	June 2, 11 a.m.	Constructing a sanitary sewer.	Constructing Quartermaster.
Ohio	Bellefontaine	June 2	Constr. reduction tank, primary contact beds, outlet drains, etc.	Dir. Public Service.
Wisconsin	Richland Center	June 2	Constructing sanitary sewers and appurtenance	W. F. J. Fogo, Chm. Com. Pub. Wks.
New Jersey	Englewood	June 3, 3 p.m.	Constructing a sewage disposal plant complete.	Oliver Drake Smith, Secy. Sew. Com.
Illinois	Ft. Sheridan	June 5, noon	Constr. sewage dis. plant complete, at Fort Sheridan.	Capt. M. E. Saville, Constr. Q.M.
Ohio	Willoughby	June 5	Install a san. sewer with manh., house and lot con. in Euclid st.	C. C. Jenkins, Village Clerk.
South Dakota	Plankinton	June 5	Disposing of sewage now emptied into small nearly dry creek.	C. E. Goodlad, City Auditor.
Dist. of Col.	Washington	June 5	Constructing sanitary sewers in various streets.	Cuno H. Randolph, Comr.
Pennsylvania	Chester	June 5, 8 p.m.	Constructing pipe sewers.	Jos. H. Griffith, Boro. Clerk.
New Jersey	Perth Amboy	June 5, 8:30 p.m.	Constr. sewers in Johnstone and Jeffreys sts.	Geo. M. Adair, Street Comr.
Nebraska	Omaha	June 5	Constr. 400 lin. ft. 6-ft., 2½ ring brick circular sewer; 1,342 lin. ft. 6-ft. reinforced concrete sewer; 16 lin. ft. funnel section; 1,392 lin. ft. 5-ft. 2-in., 2 ring brick circular sewer; 1,227 lin. ft. 3-ft. 4-in., 2 ring brick circular sewer; 556 lin. ft. 3-ft., 2 ring brick circular sewer; 420 lin. ft. 4-ft. 6-in. brick circular sewer; 1,710 lin. ft. 3-ft., 6-in. brick and plain concrete sewer; 510 lin. ft. 5-ft. reinforced concrete sewer; 510 lin. ft. 7-ft. 2½ ring brick circular sewer; 1,220 lin. ft. 5-ft., 2-in., 2-ring brick circular sewer.	Geo. W. Craig, City Engr. Harry B. Salter, City Clerk.
New Jersey	Trenton	June 6, 8 p.m.	Constr. sanitary and storm water sewers in various streets.	J. M. Terwillinger, Village Clerk.
New York	Ossining	June 6, 8 p.m.	Constr. the Kill Brook Trunk Sewer; bulkhead dock and screening chamber at outfall end; also other sewers.	Boro. Council.
Pennsylvania	Bristol	June 7, noon	Constr. complete system of sewerage and disposal plant.	E. H. Christ, Pres. Bd. Pub. Wks.
Michigan	Grand Rapids	June 8	Constr. a public sewer to be known as the East Side Trunk Sewer	A. B. Maupin, City Engr.
West Virginia	Huntington	June 10, 1 p.m.	Constructing sewers in various streets, size 12 to 18-in.	Grover E. Yerdon, City Clerk.
New York	Jamestown	June 12, 7:30 p.m.	Constr. about 30,000 lin. ft. vitrified tile sewer 30 and 24-in.	Robert Tait, Treasurer.
Alabama	Montgomery	June 13, noon	Constr. sanitary sewer on Sayre St. and necessary inters. sewer	Boro. Clerk.
Pennsylvania	West Chester	June 14	Constr. of outfall sewers and disposal plants.	Chas. A. Trimmer, City Engr.
South Dakota	Madison	June 20	Installing a sewer. Estimated cost \$65,000.	A. B. Pearsall, Chm. Bd. Pub. Wks.
North Carolina	Red Springs	June 27, 3 p.m.	Constr. a sewer system including 4½ miles of 8 to 15-inch pipe.	City Clerk.
California	San Jose	July 3	Construct septic tank for County hospital.	
WATER SUPPLY				
North Dakota	Mandan	June 2	Improving water works.	Lee Nichols, City Auditor.
Alabama	Ft. Morgan	June 2	Furn. a motor driven deep well pump, elec. trans. line, 4-in. cast iron water main, etc.	Lieut. E. F. Barlow, Con. Q. M.
Missouri	St. Louis	June 2, noon	Furn. detailed drawing, constructing and erecting at Low Service Pumping station two steam, turbine-driven centrifugal pumping units, complete with condensing apparatus.	Board Public Improvements.
New York	New York	June 5, 2 p.m.	Furn. pipes, valves and pipe fittings, boiler and pipe covering.	Henry S. Thompson, Comr. W. Sup.
New York	Yonkers	June 5	Furn. 513 lengths of 30-in. water pipe, 4,700 lbs. to the length, total of 1,205 tons. 32 tons of special castings; 5 24-in. geared gate valves.	James V. Mahoney, Secy. B.C. & S.
Oregon	Central Point	June 5, 5 p.m.	Extending water mains.	J. W. Jacobs, City Recorder.
Minnesota	Eden Valley	June 5, 8 p.m.	Constr. about 2,200 ft. of 2-in. water pipe.	W. R. Salisbury, Village Clerk.
California	Los Angeles	June 5	Constr. a one-story brick power house at County Farm.	H. J. Leland, County Clerk.
Iowa	Leon	June 5	Constructing water works system.	City Clerk.
Minnesota	Slayton	June 5	Constr. water mains in var. sts., about 3,650 ft.	Village Clerk.
Ontario, Can.	Toronto	June 6	Furnishing vertically driven pumps.	C. H. Rust, City Engr.
New York	Schenectady	June 6, 1 p.m.	Installing pneumatic water system complete consisting of one direct electric driven pump, capacity 200 gals. per hour, one electric motor, automatic starting device and pressure regulator and two 1,500 gallon tanks.	John H. Peters, Clerk, Bd. Superv.
Minnesota	Chisholm	June 6, noon	Furn. 57 tons of 4 and 6-in. c. i. water pipe.	F. L. Austin, Secy Water & Lt. Com.
Ohio	Kenton	June 6, noon	Constr. a reinforced concrete reservoir, about 2,000,000 gals. capacity. Also building additions and making alterations to pumping station.	G. S. Binkley, Clk. Bd. Pub. Serv.
Texas	Winters	June 7, 6 p.m.	Furnishing material for construction water works system including engines, pumps, boilers, pipe, valves, hydrants, tank and tower.	Guy T. McDonald, City Secretary.
New Jersey	Perth Amboy	June 7, 8:30 p.m.	Furnishing 4,000 ft. of 6-in. B. & S. water pipe and 6-in. specials	A. H. Crowell, Superintendent.
Pennsylvania	Bristol	June 7	Constr. complete system of w. w. and filtr. plant of 2,000,000 gals. capacity.	Boro. Surveyor.
Wyoming	Basin	June 7	Constructing water works and electric light plant.	James F. Ewers, Town Clerk.
New York	Geneva	June 8, 7:30 p.m.	Constr. concrete covered reservoir 2 million gallons capacity.	C. T. Church, Superintendent.
Michigan	Marquette	June 9	Constr. an extension to the water works intake, consisting of about 2,230 ft. of 36-in. c. i. pipe with all appurtenances, riprap, dredging, etc.	J. P. Kern, Secy. Bd. Fire & W. C.
Wyoming	Upton	June 9	Constructing system of water works.	Geo. H. Davis, Town Clerk.
Louisiana	Rayne	June 10	Furnishing 4, 6 and 8-inch cast iron pipe, gate valves, hydrants, etc., 5,000 lbs. of pig lead, and 300 lbs. of tarred hemp.	J. D. Hunter, Mayor.
Indiana	Richmond	June 12, 10 a.m.	Furnishing water to city for period of 25 years.	H. M. Hammond, Chm. Bd. Pub. W.
North Carolina	Tarboro	June 15, 3 p.m.	Improving water works consisting of 500,000 gallon concrete filter plant 260,000 gallon concrete storage reservoir, auxiliary electric pumping station and 1 mile of 10 inch cast iron pipe.	W. O. Howard, Mayor.
Indiana	Evansville	June 17, 10 a.m.	Furnishing about 250 tons of c. i. pipe and spec. valves, meters.	Henry L. Heilman, Secy. Bd. W. C.
Quebec, Can.	Montreal	June 29, noon	Installing pumping machinery, blower and cranes at filtration plant.	L. N. Senecal, Secy. B.I. Comrs.
BRIDGES				
Kansas	Hutchinson	June 2	Constr. reinforced concrete slab and girder bridge 50 ft. long and 90 ft. wide.	Ed. Metz, City Clerk.
Ohio	Cleveland	June 3, 11 a.m.	Repairing and general bridge work.	John F. Goldenbogen, Clk. Co. Comrs
California	Richwood City	June 5, 10 a.m.	Constr. a concrete arch bridge over Woodruff Creek.	Jos. H. Nash, Clk. Bd. Supervisors.
Kansas	Leavenworth	June 5, noon	Repairing bridge No. 8 over Nine Mile Creek, Delaware twp.	J. A. Hall, County Clerk.
Indiana	Martinsville	June 5	Constr. a concrete bridge to cost \$38,000.	J. S. Whitaker, County Auditor.
Illinois	Pekin	June 5, 1:30 p.m.	Constr. 2 small reinforced concrete bridges in Tremont twp. and Tazewell County.	County Clerk.
Indiana	Greensburg	June 5	Repairing bridges.	Frank E. Ryan, County Auditor.
Indiana	Franklin	June 5, 1 p.m.	Constructing 7 small reinforced concrete bridges.	Wm. B. Jennings, County Auditor.
Indiana	Salem	June 5, 1:30 p.m.	Constr. a concrete bridge at Colvin's Ford in Jackson twp; steel bridge on stone abutments and fills in Brown twp; crossing of concrete at Reymann Ford, Washington twp.	Frank S. Munkelt, Co. Aud.
Indiana	Shelbyville	June 6, 10 a.m.	Constructing certain culverts, abutments, etc.	G. B. Huntington, County Aud.
Indiana	Rushville	June 6, 2 p.m.	Constructing 6 bridges and repairing others.	Jesse M. Stone, County Auditor.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES (Continued)				
Florida.....	Live Oak.....	June 6.....	Erecting steel bridge over Suwanee River.....	H. A. Thompson, Chm. Joint Bd.
Florida.....	Ocala.....	June 6, noon.....	Raising the Stokes Ferry Bridge over Withlacoochee riv. 4 ft.....	S. T. Sistrunk, Clk. Bd. Co. Comrs.
Kansas.....	Garland.....	June 6, noon.....	Constr. either a steel or conc. bridge across Drywood Creek.....	Fred G. Schwartz, County Clerk.
California.....	Santa Barbara.....	June 6, 10 a.m.....	Constr. a bridge across Loma Abaja Creek.....	C. A. Hunt, County Clerk.
Indiana.....	Rockville.....	June 6, 1:30 p.m.....	Repairing two bridges.....	James E. Elder, County Auditor.
Indiana.....	Boonville.....	June 6, 2 p.m.....	Constructing 4 bridges.....	N. M. Spradley, County Auditor.
Missouri.....	Linneus.....	June 6, noon.....	Constr. bridges as follows: 58-ft. three panel steel girder; 28-ft. steel girder; 24-ft. steel girder; 48-ft. pin connected span; 45-ft. pin connected span; 30-ft. steel girder.....	Wade Ten Eyck, Highway Engr.
Indiana.....	Lebanon.....	June 7, 1 p.m.....	Constructing or repairing 18 bridges.....	B. F. Hendrich, County Auditor.
Pennsylvania.....	Somerset.....	June 7, noon.....	Constr. superstructures, substructures and abutments and furn. all steel required for six bridges.....	Edward H. Werner, Clk. Bd. Co. C Board County Commissioners.
Florida.....	Duval.....	June 7, 10 a.m.....	Constr. a reinforced concrete bridge over Miller Creek.....	Gail R. Barnard, County Engr.
Florida.....	Jacksonville.....	June 7.....	Constructing reinforced concrete bridge over Miller creek on Atlantic Boulevard.....	H. T. Batchelder, County Clerk.
California.....	Oroville.....	June 7.....	Constr. a concrete, steel and wooden bridge across Merrill Slough in Road District No. 14.....	Calvin H. Brown, County Auditor.
Indiana.....	Fort Wayne.....	June 8, 10 a.m.....	Constructing concrete culverts, concrete abutments and steel bridges; also furn. materials for repairs of bridges and putting on concrete floors.....	Albert Salm, County Auditor.
Indiana.....	Indianapolis.....	June 12, 10 a.m.....	Constr. a bridge over Fall Creek, on Capitol ave.....	Robt. Blunt, County Auditor.
Indiana.....	Scottsburg.....	June 13, 1 p.m.....	Constr. two iron bridges and four concrete bridges.....	J. A. Hall, County Clerk.
Kansas.....	Leavenworth.....	June 14, noon.....	Repairing concrete culvert on Wyandotte and Leavenworth County line, also repairing Harms Bridge in Kickapoo twp.....	City Clerk.
Pennsylvania.....	Pittsburg.....	July 1.....	Constructing one concrete arch, estimated cost \$85,000.....	
LIGHTING AND POWER				
New York.....	Amsterdam.....	June 6, 8 p.m.....	Lighting streets and public places.....	Thos. Hazlett, Clerk.
Alabama.....	Eufaula.....	June 7.....	Constructing an electric light plant complete.....	W. L. Upton, Engr. Birmingham.
Virginia.....	Barton Heights.....	June 9.....	Installing a municipal gas plant.....	Town Clerk.
Georgia.....	Colquitt.....	June 10.....	Improving electric light system to cost \$7,500.....	P. E. Willin, Mayor.
Maryland.....	Fort Howard.....	June 12, 11:30 a.m.....	Constructing electric light plant and lighting system.....	T. A. Terry, Constr. Q.M., U.S.A.
FIRE EQUIPMENT				
New Jersey.....	New Brunswick.....	June 5, 7:30 p.m.....	Furn. 1,000 ft. of 2 1/2-in. fire hose in lengths of 50 ft. together with couplings.....	Wm. Goodwin, Chm. Fire Committee.
Dist. of Col.....	Washington.....	June 15, 2 p.m.....	Furn. one second size, double action steam fire engine.....	Cuno H. Rudolph, Commissioner.
Dist. of Col.....	Washington.....	June 20, 2 p.m.....	Furn. 15,000 ft. 2 1/2-in. cotton covered rub. lined fire hose.....	Cuno H. Rudolph, Commissioner.
New Jersey.....	Princeton.....	July 5.....	Furn. auto pumping engine.....	E. M. Updike, Chm. F. & W. Com.
MISCELLANEOUS				
Pennsylvania.....	N. Braddock.....	June 3.....	Furn. garbage disposal furnace of 10 tons, 15 tons and 20 tons capacity in 24 hours. Constructing building to enclose same.....	Boro. Secretary.
Delaware.....	Dover.....	June 6, noon.....	Constructing wharf.....	Jas. T. Truax, Pr. Levy Crt., Kent Co.
Nebraska.....	Imperial.....	June 6, noon.....	Constructing new court house and jail building.....	M. H. Prall, County Clerk.
Florida.....	Ocala.....	June 6, noon.....	Furn. a prison van for not less than 20 prisoners; also an 8 to 10-ton road roller.....	S. T. Sistrunk, Clk. Bd. Co. Comrs.
Nebraska.....	Pierce.....	June 15, 9 a.m.....	Constructing a Carnegie Library.....	Fall River Co., Arch. Hot Spgs. S.D.
Ohio.....	Dayton.....	June 5, noon.....	Constr. a concrete retaining wall along Mad River levee.....	I. C. Ely, Dir. Pub. Service.
Louisiana.....	New Orleans.....	June 6.....	Furn. about 26,000 tons of rock for bank revetment.....	H. Burgess, Maj., Engineer.
Pennsylvania.....	McKeesport.....	June 6, 8 p.m.....	Furnishing 2 street sweepers.....	C. E. Soles, City Comptroller.
Ohio.....	Port Clinton.....	June 7.....	Dredging, installing engines, pump building etc. for the West Harbor improvement.....	F. H. Suhrbier, County Surveyor.
Virginia.....	Portsmouth.....	June 8, 8 p.m.....	Furnishing a patrol wagon.....	J. Ed. Johnson, Chm.
Texas.....	San Antonio.....	June 12, 10 a.m.....	Remodeling the county jail, est. cost about \$50,000.....	County Commissioners.
Indiana.....	Evansville.....	June 19, 7 p.m.....	Constr. earth work embankments surrounding filtration plant consisting of about 2,500 cu. yds.....	Henry L. Heilman, Secy. Bd. W. C.
Ohio.....	Toledo.....	June 20, noon.....	Constructing a market house.....	J. R. Cowell, Director Public Service.
Indiana.....	South Bend.....	June 26, 10 a.m.....	Furn. 50 or more voting machines.....	John W. Harbou, Auditor.
Indiana.....	Muncie.....	July 5.....	Constructing a new barn at County Infirmary, 40x50 ft.....	County Auditor.

STREET IMPROVEMENTS

Bakersfield, Cal.—Council will soon ask bids for paving about 38 city blocks with asphalt and perolithic.

Trinidad, Col.—County Comrs. are receiving bids for constructing 21 miles of highways between Trinidad and Aguilar.

Albany, Ga.—Citizens will vote June 12 on \$100,000 bonds for paving streets in business section.

Tampa, Fla.—Paving of Ruby st. and Nebraska ave. is being considered.

Sylveste, Ga.—Worth County Commissioners are considering \$100,000 bond issue for road construction.

Chicago, Ill.—West Park Commissioners have decided to improve side drive in Humboldt Boule. near Logan sq.; cost about \$24,000.

Fort Wayne, Ind.—Engineer Frank M. Randall has submitted tentative estimates of the costs of opening Webster st. under Pennsylvania and Wabash tracks.

Indianapolis, Ind.—Board of Public Works has decided to improve Harmon st. from Henry st. to South st.

Fort Dodge, Ia.—Bids have been rejected for constructing concrete pavement near Reynold's Park; new bids will be asked.

Greensfield, Ia.—Town Council is considering paving of public square and streets leading into square; cost about \$30,000.

Mapleton, Ia.—Council is considering oiling of 15 blocks business district.

Henderson, Ky.—Council has adopted ordinance providing for seven miles of graveloid pavement.

Adams, Mass.—Town is considering paving Commercial st. with brick at a cost of \$45,000.

Detroit, Mich.—Contract will soon be let for resurfacing portion of 2d ave. at cost of \$9,453.

Royal Oak, Mich.—Citizens have voted \$40,000 bonds for macadamizing Woodward ave.

Bozeman, Mont.—Council has decided to pave North Wallace st.

Carthage, Mo.—Council is considering re-grading and oiling of Main st. from 5th st. to Centennial ave.

Atlantic City, N. J.—Preliminary experiments are under way by the Boardwalk Committee of Council to ascertain what material would be most advisable for use in rebuilding Boardwalk; work must be taken up in near future.

Atlantic City, N. J.—Mayor Stoy has signed ordinance to issue \$22,000 bonds for paving Massachusetts and other avenues; also ordinance providing for the paving of Chalfonte ave., Spring lane, Graff lane, Indiana ave. and Canal st. and other avenues.

Jersey City, N. J.—For repaving Tonnele ave. from Broadway to Pavonia ave., Street and Water Board has asked Board of Finance to appropriate \$3,799.70.

Madison, N. J.—Council has decided to widen Main st.

Newburgh, N. Y.—Cost of a bituminous macadam road in Mill st. from Broadway to Bridge st. will be \$10,300, according to estimate prepared by City Engineer Blake; this includes \$675 for engineers' services and other incidentals, and \$9,625 for furnishing and laying material.

Newburgh, N. Y.—Paving anew of Colden and Water sts. between Broadway and South st. has been ordered by Council; estimated cost of the improvement, if streets are paved with new granite blocks, is \$31,600; if streets are paved with vitrified brick, \$28,100; if granite block now there is raised and re-laid, approximately \$21,200.

New York, N. Y.—Board of Estimate is considering bond issues to extend 7th ave. through Varick st. into Hudson; at a cost of \$6,000,000; opening of Irving pl. through to the south through private property to 4th ave. at 12th st. at a cost of \$2,500,000; also \$500,000 appropriation for street paving in Manhattan in addition to \$1,000,000 already appropriated and \$20,000 for asphalt repair plant.

Nyack, N. Y.—Board of Trustees has decided to reject all bids for improvement of North Broadway; new bids will be asked for road composed of one-half tarvia and one-half asphalt.

Schenectady, N. Y.—Board of Contract and Supply will ask for bids for paving Bradley st. with cement concrete.

White Plains, N. Y.—Village Board has decided to spend \$20,000 for permanent improvements to four streets.—John J. Brown, President.

Charlotte, N. C.—Citizens will vote July 4 on \$865,000 bonds for street work and other improvements.

Kings Mountain, N. C.—Kings Mountain Precinct, Cleveland county, has voted \$25,000 bonds for construction of sand-clay roads.

Louisburg, N. C.—Township and Louisburg road committee propose to issue \$20,000 bonds for road construction, work to be in charge of W. S. Fallis; material and equipment will be purchased.—Thomas B. Wilder, Secretary.

Niles, O.—Council has decided to pave and curb Vienna ave. and Beaver st.

Baker, Ore.—Mayor C. L. Palmer is investigating paving in other cities.

Junction City, Ore.—Citizens will vote July 3 on \$17,000 bonds to grade and gravel streets.

New Brighton, Pa.—Council has decided to expend \$67,000 on street improvements.

Philadelphia, Pa.—Citizens have voted \$500,000 loan for repaving streets not occupied by car tracks, \$500,000 for improving boulevard from 2d st. to Rhawn st., \$500,000 for opening streets between Richmond st. and Kensington ave., \$300,000 for repaving streets with wood blocks; \$150,000 for grading streets, \$150,000 for improvement of South Broad st. plaza, and \$100,000 for surfacing and resurfacing country roads.

Sharpsville, Pa.—Paving of Ridge ave. is being considered.

Chattanooga, Tenn.—Bids will soon be asked by Engineer Betts for paving Main

st. from East End ave. to foot of Mission Ridge; specifications have been approved by Hamilton County Road Commission.

Liberty, Tex.—Liberty Precinct, Liberty county, has voted \$250,000 bonds for construction of about 90 miles of roadway.

Colfax, Wash.—City is about to let contracts for paving with Hassam or bitulithic, also for small amount of concrete curb and sidewalk. J. H. Miller, City Engineer.

Sultan, Wash.—Bids will soon be received for grading and graveling 1st st. after plans by Coast Engineering Co.

Morgantown, W. Va.—Citizens will vote June 24 on \$100,000 bonds to pave streets and lay sewers.

Superior, Wis.—Board of Public Works has rejected all bids and will readvertise for construction of between three and four miles of cement sidewalks.

CONTRACTS AWARDED

Phoenix, Ariz.—By Board of Supervisors to Good Roads Company for surfacing of the roadway of the bridge, the approaches and stretch of the adjacent road, altogether 6,780 ft.; \$1,600.

Lodi, Cal.—Proposed street work, to Barber Asphalt Paving Co., \$35,097.07; other bidders: Ransome-Crummey Co., \$37,780.97; Federal Construction Co., \$38,313.79; Clark & Henry Construction Co., \$40,420.54.

Bridgeport, Conn.—To U. S. Wood Preserving Co. for furnishing wood blocks for paving Barnum ave., \$1.84 per yd. with guarantee; laying same, to W. H. Arthur, Stamford, \$1.33 per sq. yd.

Lewiston, Ida.—Excavating 69,500 cu. yds. rolling roadway, 16,300 lin. ft. of field stone gutters, 59,350 lin. ft. of concrete curbs, 1,940 lin. ft. of 8-in. steel or concrete drainage pipe, 108 concrete ends for drainage pipe to Two Miracle Co., Minneapolis, Minn.

Chicago, Ill.—Paving by Board of Improvements: Chestnut pl., Delevan pl., to Walton pl., to Central Paving Co., \$1,362; 172 Washington st., alley, Fullerton Parkway, Arlington pl., to P. J. O'Brien, 145 La Salle st., \$3,192; alley, W. Chicago ave., Superior st., to P. J. O'Brien, \$2,308; alleys, Webster st., Cleveland ave., etc., to Jas. A. Lackley Co., 307 Chamber of Commerce Bldg., \$3,681; alley, Shades pl., Willow st., etc., to P. J. O'Brien, \$4,503; alleys, Schiller st., North Park ave., etc., to John A. McGarry Co., 188 Madison st., \$2,005; alleys, Webster ave., Orchard st., etc., to Pas. A. Sackley Co., \$2,951; alleys, Wilson ave., Leland ave., etc., to P. J. O'Brien, \$3,137; alleys, Bourn ave., Grand blvd., etc., to Jas. A. Sackley Co., \$4,167; alley, Wisconsin st., Sedgwick st., etc., to Jno. A. McGarry Co., \$2,882; alleys, Garfield ave., Larrabee st., etc., to Jno. A. McGarry Co., \$3,675; E. 42d pl., Drexel blvd., to I. C. R. R., to American Asphalt Paving Co., 138 Washington st., \$11,717; E. 53d st., Indiana ave. to South Park ave., to American Asphalt Paving Co., \$8,064; Greenwood ave., 55th st. to 56th st., to American Asphalt Paving Co., \$4,544; Hamlin ave., Armitage ave. to McLean ave., to American Asphalt Paving Co., \$2,469; Maplewood ave., Diversey ave. to Elston ave., to American Asphalt Paving Co., \$5,439; Medill ave., Kimball ave. to Central Park ave., to American Asphalt Paving Co., \$8,324; Sacramento ave., 37th pl. to 39th st., to R. F. Conway Co., 138 Washington st., \$7,063; Seminary ave., Maud ave. to Center st., to American Asphalt Paving Co., \$4,455; E. 76th pl., Marquette ave. to Coles ave., to R. F. Conway Co., \$4,190; W. 23d pl., Wentworth ave. to Canal st., to American Asphalt Paving Co., \$13,265; W. 33rd pl., Ashland ave. to Archer ave., to R. F. Conway Co., \$12,239; Wilson ave., Lincoln ave. to N. Western ave., to R. F. Conway Co., \$5,262; 90th Pl. System to Farr Bros. Co., 356 W. 111th st.

Marion, Ind.—To Wm. Yates for paving with brick portion of Garfield st., \$7.50 per lin. ft.

Vincennes, Ind.—By Board of Public Works for improvement of Dubois st., 1st st. to 11th st. to Wm. H. Moore & Son.

Wabash, Ind.—Improving Cass st. to Western Construction Co., Lafayette, \$26,199.99.

Cedar Rapids, Ia.—Paving 16th ave. bridge with creosote block, to Mike Ford, Cedar Rapids, \$2 yd.

Catlettsburg, Ky.—To Daniel Trapp, 725 Mammoth ave., Newport, for construction of approximately 25,000 sq. yds. of block pavement, \$1.69 per sq. yd.; 15,000 lin. ft. of concrete curb and gutter, 50c. per lin. ft.

Boston, Mass.—Paving Geneva ave., from Bowdoin st. to Columbia rd., Dorchester, is to Central Constr. Co., about \$24,000.

Holyoke, Mass.—Building embankment wall in Railroad st., by Board of Public Works, to P. J. Kennedy, Jr., city, \$11,720.

Holyoke, Mass.—Spreading oil over 10 miles of city streets, to American Car Sprinkler Co., Worcester.

Bay City, Mich.—Laying sidewalks on city account, to Ryan & Son in the first district, 10c.; to John Dardas in second district, 9½c., and to William Green in the third district, 9½c.

Duluth, Minn.—To P. McDonnell for paving Grand ave. West between 54th and 59th aves. with vitrified brick, with granite curb and asphalt filler, \$50,500; E. 5th st., between 14th ave. E. and Woodland ave. will be graded and graveled.

Fulton, Mo.—Paving Court, 5th, Market, E. 5th and W. 7th sts to Jno. Pope, \$35,219.

St. Louis, Mo.—Paving with wood block, Benton st., to Parker Washington Co., 4500 Duncan ave., \$45,948; with bitulithic, 25th st., Granite Bituminous Paving Co., \$34,734; with asphalt, 21st and Howard st., Green and Clay aves., to G. A. Heman, for \$77,141.

Bozeman, Mont.—Building cement pavements during year to S. Birch & Son.

Concord, N. H.—Paving 3½ miles in Hinsdale, to Lane Construction Co., Meriden, Conn.; paving 4,500 ft. in Bethlehem, to Martin & Conelin, Watertown, Mass.

Atlantic City, N. J.—Paving Vermont ave., to United Paving Co., \$109,218; Congress ave., to same company, \$10,311.

Camden, N. J.—To Gibbs & Co., for resurfacing White Horse turnpike between Berlin and Kirkwood, for \$43,302.70, and to J. F. Shanley & Co. for work on other part of pike at \$73,259.35; to the E. E. Humphreys Co., for resurfacing Browning rd. from Merchantville to Marlton ave., Camden, \$9,930.

Haddon Heights, N. J.—Laying of macadam roads in all of principal streets to James McGowan, 65c. per ton.

Kearney, N. J.—Paving Berlin st. to Van Keuren & Son, \$9,457; grading, curbing and flagging Highland and Brighton aves. and building sewer in Brighton ave. to Dennis Dunn, Jr., \$2,103.75, \$2,233 and \$878.

Morristown, N. J.—By Board of Freeholders for repairing and improving county roads: The Budd Lake rd., distance 11,000 ft., to Salmon Bros., \$3,520.08; the Succasunna and Landing rd., distance 1,300 ft., to Ludwig Bott, \$2,000; Kenil and Mt. Arlington rd., distance of 1,200 ft., to Salmon Bros., \$435; the Kenil and Mt. Arlington rd., distance 3,300 ft., to Salmon Bros., for \$1,276; Kenil, Mt. Arlington and Youngs Bridge rd., distance 2,700 ft., to Ludwig Bott, \$3,800; the Chester and Morristown rd., distance 31,000 ft., to Salmon Bros., \$11,573.24; Morristown and Madison rd., distance 11,000 ft., to T. J. Allen, \$21,706.25; James st., Morristown rd., distance 1,500 ft., to W. S. Conover, \$5,550.27; Paterston and Hamburg Turnpike rd., distance 7,000 ft., to Colfax & Steele, \$3,266.90.

Nyack, N. Y.—Building tarvia filled macadam road from New st. to Upper Nyack village line to Jas. Duell, Tarrytown, \$1.21 per sq. yd.; this contract was given up by John M. Rooney.

Richmond Hill, L. I., N. Y.—To Paul Ebner, Sea Breeze Heights, Tottenville, S. I. for laying concrete sidewalks and grading roads for Richmond Hill Investment Company, of Long Island, \$10,000.

Schenectady, N. Y.—Paving River road with sheet asphalt to Schenectady Contracting Co.; same thoroughfare from Mill Lane to city line with macadam pavement to same firm; paving De Graf st. with brick to Thos. R. Crane; portion of Church st. with sheet asphalt to Schenectady Contracting Co.

Syracuse, N. Y.—Grading Oakland ave. to Anthony Spasato, \$811.20; Greenway ave. to same, \$9,692.35; Hawley ave. to Samuel Bonn, \$1,008.

Yonkers, N. Y.—Regulating and grading of Alexander ave., to Jos. Cuzzo, \$1,460.88; other bidders: O'Rourke Construction Co., \$1,813; William J. Watson, \$1,502; McDonald & Murray, \$1,599; Thomas F. Grady, \$1,600; Kelly & Hannifan, \$1,545; N. Mangini, \$1,586; F. Cianfaglione, \$2,000; A. Fisher, \$1,625; Joseph Canepigo, \$1,956; Joseph Cuzzo, \$1,460.88; Coutant ave., from Sterling ave. to Kimball ave., to T. J. Watson, \$5,802; other bidders: O'Rourke Co., \$9,969; McDonald & Murray, \$8,637; Thomas Grady, \$11,750; Kelly & Hannifan, \$10,364; N. Mangini, \$7,950; F. Cianfaglione, \$9,300; A. Fisher, \$10,159; Joseph Canepi, Jr., \$8,810.20; Joseph Cuzzo, \$6,454.55; Glover ave. to same, \$1,845; other bidders: O'Rourke Co., \$3,424; McDonald & Murray, \$3,839; Thomas F. Grady, \$3,200; Kelly & Hannifan, \$2,960; N. Mangini, \$3,500; F. Cianfaglione, \$3,100; Anthony Fischer, \$3,376.25; Joseph Canepi, Jr., \$3,248.75; Joseph Cuzzo, \$2,488.25.

Chardon, O.—Paving South Pike, 2.04 miles Hamden Township, to Cement Products Co. of Erie, Pa., \$20,385.

Dayton, O.—Paving Huffman ave., Overlook to Mary sts., to J. E. Conley & Co., \$40,483.

Dayton, O.—Macadamizing Cincinnati pike, from Miamisburg to West Carrollton, to Gebhart & Kline, \$10,242.50; Mudlick bridge at Germantown, to E. H. Fauver, \$677.

Elyria, O.—Paving West River st., to Sol. Mendolson, \$14,000.

Montpelier, O.—To H. S. Enck, Lima, O., for paving Empire and Main sts., about \$48,908.

Napoleon, O.—Mess rd., to W. H. Jeakle, Jr., \$13,613; Bevelheim rd., to Rasmus & Clark, \$14,188; Young rd., to George W. Cody, \$8,971; Cavanaugh rd., to J. W. Ritz, \$4,095; Ragan rd., to George Dull, \$6,146; Linthicum rd., to Vajan & Rauch, \$8,205; Gramling rd., to Conway & Harper, \$5,319.

Portsmouth, O.—To Kaps Bros., Portsmouth, improving 8th st., \$15,207; Offnere st., \$12,799; to Kelly Bros., Portsmouth, Broadway, \$6,477; Monroe st., \$1,099; Lawson st., \$1,275.—H. F. Thompson, Clerk Department Public Service.

Youngstown, O.—Paving, to Turner & Olsen, Rigby st., \$14,530; to Mullin & Quinn, Rose st., \$4,937; to Kennedy Bros., Plum st., \$10,376; to Charles Harris, Lydia st., \$18,536.

Klamath Falls, Ore.—Paving of 10 blocks of Klamath ave. and eight blocks on eight intersecting cross streets, to Warren Construction Co., \$2.20 per yd. for bitulithic; Clarke Construction Co. bid \$2.27 for asphaltum.

Pittsburg, Pa.—By Mayor W. A. Magee and Director Joseph G. Armstrong, of the Department of Public Works, for improvement of South 18th st. and repaving and improving of a number of other streets; successful bidders were: South 18th st., M. O'Herron & Co., \$88,300; paving Coleman st., R. D. Thomas & Co., \$4,190.13; paving Industry st., Ott Bros. Co., \$9,913.25; paving Ewer alley, J. B. Sheets Co., \$1,378.55; paving Meadow st., Barber Asphalt Paving Co., \$5,880.81; repaving with blockstone, 4th st., H. C. Howard, \$2,774.10; Davison st., H. C. Howard, \$3,344.65; Locust st., H. O'Herron & Co., \$2,837.05; South 19th st., Booth & Flinn, \$1,069.65; Mulberry alley, Evan Jones Co., \$1,069.65; Milbridge st., Ott Bros. Co., \$2,166.40; Penn ave., M. O'Herron & Co., \$12,911.96; Grandview ave., \$2,628.41; 20th st., Evan Jones Co., \$650.70; Gibbon st., M. O'Herron Co., \$1,487.30; repaving with brick, Pleasant Valley, H. C. Howard, \$1,239; Lotus alley, H. C. Howard, \$1,902.80; Tustin st., Tvan Jones Co., \$1,599.60; Fox alley, Thomas Cronin Co., \$3,129.60; repaving with asphalt, Holmes st., Barber Asphalt Paving Co., \$7,699.77; 42d st., Booth & Flinn, \$2,398.45; 5th ave., Booth & Flinn, \$8,437.90; repaving with blockstone and asphalt, Greenfield ave., Booth & Flinn, \$6,395.20; repaving with brick and asphalt, Adelaide st., Booth & Flinn, \$4,243.10; repaving with creosoted wood block, Ohio st., M. O'Herron & Co., \$8,346.25.

Milwaukee, Wis.—Street contracts, bituminous pavement, to Badger Construction Co., Greenfield ave., Clinton st. to 11th ave., \$1.40 sq. yd.; to R. F. Conway Co., North ave., 7th to 26th st., \$1.45, and Greenfield ave., 11th ave. to Layton blvd., \$1.40 sq. yd.

BIDS RECEIVED

New Orleans, La.—Constructing Colfax-Rochelle rd. in Grant Parish: A. L. Patterson & Co., New Orleans, \$60,833; Francis T. Constant, Alexandria, La., \$56,920.

Atlantic City, N. J.—Paving St. James st.: Atlantic Construction and Supply Co.: brick, 3 in. thick, \$3.45; 3½ in. thick, \$3.75; 4 in. thick, \$3.92. Bitulithic, \$2.75 and \$2.10. E. L. Bader: brick, 3 in., \$3.49; 3½ in., \$3.70; 4 in., \$3.90. United Paving Co.: bitulithic, \$2.70 and \$2.00. Both brick and bitulithic for Virginia ave. were as follows: E. L. Bader: brick, \$2.70; no bid on bitulithic. Atlantic Construction & Supply Co.: brick, \$2.68; bitulithic, \$2.75. United Paving Co.: brick, \$2.65; bitulithic, \$2.70.

New York, N. Y.—Constructing the transverse road at E. 170th st., in connection with the Grand blvd. and Concourse, McHarg Barton Co., 165 Bway, lowest bidder, as follows: 16,300 cu. yds. of earth excav., 70c.; 24,800 cu. yds. rock excav., \$1.32; 4,400 cu. yds. filling and back-filling, 1c.; 50 cu. yds. cinder fill, 60c.; 5 M. ft. lumber, \$40; 480 cu. yds. Class "A" concrete, \$8; 4,000 cu. yds. Class "B" concrete, \$5; 25 cu. yds. cinder concrete, \$5.20; 9,300 sq. ft. waterproofing, 4c.; 250 cu. yd. granite newels, fenders and coping, \$3.50; \$20 lin. ft. vitr. stoneware pipe drain, 15 in., \$1.50; 400 lin. ft. vitr. stoneware pipe drain, 12 in., \$1.50; 300 lin. ft. vitr. stoneware pipe drain, 10 in., \$1.50; 46 spurs for house connections, \$1; 12 manholes, \$75; 4 standard receiving basins, \$115; 4 Type "A" inlets, \$45; 2 Type "B" inlets, \$35; 2 Type "C" inlets, \$15; 80 sq. yds. paved gutters, \$2; 300,000 lbs. steel and iron, exclusive of railings, 3.2c.; 1,660 sq. ft. woven wire fabric, 6c.; 180 lin. ft. standard water pipe,

12 in., \$2; 135 lin. ft. standard water pipe, 20 in., \$3.50; 2,800 lin. ft. new bluestone curb, \$1; 90 lin. ft. new granite curb, \$1.70; 230 lin. ft. old bluestone curb, 35c.; 20,300 sq. ft. cement flag, 23c.; 200 sq. ft. old bluestone flag, 5c.; 600 sq. ft. new bridge-stone, 85c.; 1,050 sq. ft. old bridge-stone, 10c.; 7,450 sq. yds. asphalt block pvt., \$2.20; 1,600 sq. yds. macadam pvt., 80c.; 91 lin. ft. Type "A" railing, \$5; 970 lin. ft. Type "B" railing, \$2.50; 100 lin. ft. guard rail, 40c.; 18,300 sq. ft. surface treatment of concrete, 4c.; maintenance of traffic and cleaning up, lump sum, \$1,000; total, \$114,945; totals of other bids: Leahy Cont. & Constr. Co., \$138,053; McDonald & Barry, \$125,300; J. B. Malatesta, \$130,745; Godwin Constr. Co., \$131,705; T. Crimmins Contr. Co., \$129,298; T. J. & G. L. Brown, \$143,747; J. C. Rodgers, \$130,170; A. J. Schwartzler, \$118,591; Burnside Contr. Co., \$122,985; Rodgers & Haggerty Co., \$122,593; Voorhies, Sullivan Contr. Co., \$118,949; Handy Bros. Contr. Co., \$117,899; following are the totals of the lowest bid on other streets: Paving with asphalt on concrete foundation, Hastings Paving Co., 25 Broad st., bid for Kingsbridge rd. from Jerome ave. to Preston st., \$8,708; E. 166th from Webster ave. to Morris ave., \$11,802, and E. 178th st., from Burnside ave. to Park ave., \$4,231; for paving with sheet asphalt, Freeman st. from Stebbins ave. to Intervale ave., Asphalt Constr. Co., Madison ave. and 137th st., bid \$7,936; and regulating, grading, flagging, etc., Van Cortlandt ave., from Moshulu Parkway to Jerome ave., De Manna & De Paola, \$4,722.

Oklahoma City, Okla.—Paving with asphalt Linwood Blvd., (a) from 10th st. and Pennsylvania ave. to 16th st. and Pennsylvania ave., estimated cost, \$140,000; (b) from 16th st. and Pennsylvania ave. to Grand Blvd. and Linwood ave., estimated cost, \$60,000; Swatek & Parker, (a) and (b) \$2.24 per sq. yd.; Severens Paving Co., (a) \$2.15, (b) \$2.17; Western Paving Co., (b) \$2.25.

Madison, Wis.—Paving with creosoted block Webster st. and brick on E. Wilson st., Nicholas Quinn, lowest bidder, \$7,956 and \$11,995, respectively; with asphalt on State st., John Blake, \$30,000; with asphalt on Park st., Andrus Asphalt Co., \$10,015; with creosote block E. Johnson st., John Cullinane, at \$16,709.

SEWERAGE

Ozark, Ala.—Citizens have voted \$15,000 bonds to install sewers.

Ansonia, Conn.—Sewer Commission is planning extension of the sewer system through First Ward. Vincent B. Clark, City Engineer, will prepare the plans.

Windsor Locks, Conn.—J. E. Egan & Son have completed plans for construction of proposed sewer system.

Albany, Ga.—Citizens will vote June 12 on \$100,000 bond issue for extension of sewer system, erection of gas plant, paving streets in business section, opening new streets, and enlargement of park and cemetery.

Blackshear, Ga.—Town is considering construction of sewer system.

Ft. Valley, Ga.—Bids will be received June 15 for \$15,000 sewerage, \$5,000 water works and \$20,000 school bonds.

Savannah, Ga.—Extension and improvement of the storm water drainage system is being considered.—John W. Howard, City Engineer.

Sylvester, Ga.—City is considering \$20,000 bond issue for extension of sewer system and water mains.—T. J. Bridges, Mayor.

Unadilla, Ga.—Citizens will vote June 15 on \$15,500 bonds for sewer construction.

Goshen, Ind.—Plans are being prepared and bids will soon be asked for construction of sanitary sewer system beginning in North 5th st.

Valley Junction, Ia.—The Iowa Engineering Co., Clinton, has completed plans for seven miles of sanitary sewer and disposal plant; cost, \$40,000.

Nashville, Mich.—Council has decided to construct sewer in section of village.

Reed City, Mich.—Mayor M. W. Brown has secured Engineer to plan erection of disposal plant.

Albany, N. Y.—Board of Contract and Supply has selected Rudolph Hering, of New York City, as engineer for proposed intercepting sewer.

Newburgh, N. Y.—City Engineer Blake is to prepare plans and specifications for sewer to border and cross Erie property on south and east of Washington Heights.

Schenectady, N. Y.—Bids will be asked by Board of Contract and Supply for building sewers in Baker ave. from Eastern ave. to City line.

Charlotte, N. C.—Citizens will vote July 4 on \$865,000 bonds for sewer work and other improvements.

Clinton, N. C.—Citizens voted \$30,000 sewer and water bonds.

Niles, O.—Council has decided to construct street sewers on portions of four streets.

Reading, O.—Citizens will vote July 30 on \$20,000 sewer bonds.

New Philadelphia, Pa.—Citizens will vote June 5 on \$140,000 bonds for installation of about 12 miles of sanitary and three miles of storm sewers and a disposal plant.—G. E. Arnold, City Engineer.

Philadelphia, Pa.—Citizens have voted \$50,000 loan for reconstruction of Concock Creek sewer and \$160,000 for construction of main sewers.

Forney, Tex.—Citizens will vote June 5 on bonds for construction of sewer system.

Colfax, Wash.—City is about to let contract for proposed sewer work, J. H. Miller, City Engineer.

Morgantown, W. Va.—Citizens will vote June 24 on \$100,000 bonds to lay sewers and pave streets.

CONTRACTS AWARDED

Mullan, Ida.—Constructing sewage system to R. M. Bardsen & Co., of Butte, Mont., \$15,714.

Humboldt, Kan.—Furnishing material and constructing a system of sewerage and drainage in Sects. 1 and 2, from plans of J. S. Worley Co., Engrs., Reliance Bldg., Kansas City, Mo., to Launder & Linder, Kansas City, Mo., \$21,410.

East Las Vegas, N. M.—To Thomas McGovern and P. J. Ryan, Pueblo, Col., for construction of sewer system, \$20,663; other bidders: J. A. Pringle, Kansas City, Mo., \$24,347.50; W. F. Dicus, Douglas, Ariz., \$22,800; Rushmore & Gowdey, Hutchinson, Kan., \$23,840; Stokes Construction Co., Oklahoma City, Okla., \$24,952.50; J. C. Huff, Deming, N. M., \$24,300; National Construction Co., McAlester, Okla., \$24,872.50; Foster & Doll, Denver, Col., \$32,261.50; F. J. Gehring, East Las Vegas, N. M., \$29,516; Westcott & Doan Investment Co., Denver, Col., \$32,017; Peter O'Brien Construction Co., Denver, Col., \$25,737.50.

Syracuse, N. Y.—Building Colvin st. trunk sewer extension to Patrick & Kiely, \$51,703.50; building lateral sewers to following: Lancaster ave. sewer, James Swift, \$4,449.50; Livingston ave., James Swift, \$1,225; Sumner ave., Philip Thomas, \$1,294.50; Ackerman ave., Philip Thomas, \$4,066.75; to Jas. Swift for sewer through Dunn and Gore lots, across Hamilton st. and through Schuyler st., \$1,549.80.

Central Point, Ore.—Building sewer system, to Jacobson-Bade Co., 407 Stanton st., Portland, \$64,495.

Centralia, Wash.—Building trunk sewer, to F. A. Kessal, city.

BIDS RECEIVED

San Diego, Cal.—Furnishing f. o. b. San Diego 171,455 ft. 14 to 6-in. vitr. salt glazed sewer pipe and 5,520 yds. different sizes, Pacific Sewer Pipe Co., I. W. Hellman Bldg., Los Angeles, lowest bidder, \$31,542.

Syracuse, N. Y.—Building Colvin st. sewer extension; lowest bid was \$51,703.50, by P. R. Kiely, on specifications for reinforced concrete pipe; for brick, specifications designated as (a), and for concrete, specifications designated as (b), Frank George, Batavia, was lowest bidder, \$54,428.25 on specifications (a) and \$54,748.70 on specifications (b). On specifications (d), calling for concrete block, the lowest bid was submitted by John Davin, Jr., at \$54,888; Albert Gaffey, specifications (a) \$92,595, (b) \$92,295, (c) \$78,965, (d) \$92,595; John Young, (b) \$55,912.50; Samuel Bonn, (a) \$59,758, (b) \$59,019.50, (c) \$60,740.25, (d) \$59,110; Nicholas Marnell (a) \$65,543; Frank George, (a) \$54,438.25, (b) \$54,718.70, (c) \$57,269.45, (d) \$56,457.25; C. T. Hookway, (c) \$74,751; P. R. Kiely (c) \$51,703.50; John Davin, Jr., (c) \$54,888; lateral sewers of the same system were as follows: Lancaster ave. and Poplar st., A. Sperato, \$4,763.20; C. Bonn, \$4,813.75; John Davin, Jr., \$4,968; A. Barr, \$4,605.75; James Swift, \$4,449.50; S. Bonn, \$4,586.25; Philip Thomas, \$4,661.75; C. T. Hookway Construction Co., \$5,243.50; Ackerman ave., John Davin, Jr., \$4,693.50; A. Sperato, \$4,740; C. Bonn, \$4,462; A. Barr, \$4,672; James Swift, \$4,408; Philip Thomas \$4,066.75; C. T. Hookway Construction Co., \$5,113.50; Sumner ave., C. T. Hookway Construction Co., \$1,579; S. Bonn, \$1,801; A. Sperato, \$1,437.30; C. Bonn, \$1,491; J. Swift, \$1,251; John Davin, Jr., \$1,385; P. Thomas, \$1,294.50; Livingston ave., A. Sperato, \$1,295.30; J. Davin, Jr., \$1,361; S. Bonn, \$1,389.50; C. Bonn, \$1,357; J. Swift, \$1,223; P. Thomas, \$1,233.50; C. T. Hookway Construction Co., \$1,442.50.

Syracuse, N. Y.—Constructing sewer across the Dunn and Gere lots, between Hamilton and Schuyler st., as follows: James Swift, \$1,549.80; Charles Bonn, \$1,918.30; Samuel Bonn, \$3,929.50.

WATER SUPPLY

Hamilton, Ill.—L. P. Wolff, of St. Paul, Minn., is preparing plans for proposed water works.

Peoria, Heights, Ill.—Village is considering bond issue for establishment of water plant; Engineer will be selected to prepare estimates. Jos. Downs is interested.

Clinton, Ind.—City is considering construction of two miles of 4, 6 and 8-in. c.-i. pipe.—Wm. Hamilton, Superintendent of Water Works.

Morocco, Ind.—Council will soon ask for bids for installation of modern water works plant.

Lawrence, Kan.—Lawrence Water Co. is contemplating expenditure of from \$40,000 to \$50,000 this summer in improving and increasing efficiency of system.

Topeka, Kan.—Purchase of 8,000,000-gallon pump is being considered by water works officials.

Baltimore, Md.—New bids will be asked for suction and installation of pump at Mt. Royal pumping station.

La Plata, Md.—G. E. A. Haerley, 511 Equitable Bldg., Baltimore, is preparing survey preparatory to construction of proposed water system.

Boston, Mass.—Council has authorized \$300,000 loan for purchase of equipment for lighting side streets by gas with automatic devices for lighting and extinguishing.

Franklin, Mass.—Town has voted \$50,000 to extend and improve water works.

Biloxi, Miss.—E. C. Castanera, Superintendent of Water Works, has estimated that extension of water works will require 16,000 ft. of 4-in. mains, 45,200 ft. of 6-in. mains, 2,000 ft. of 8-in. mains, 112 new fireplugs, reservoir, two pumps and a firehouse, costing about \$10,000. Citizens will vote June 27 on \$70,000 bond issue.—E. Glennan, Mayor.

Millard, Neb.—Citizens have voted \$10,000 bonds for water works.

Manchester, N. H.—City will install water mains on east and west sides at cost of \$30,000.

Conklingville, N. Y.—State Water Supply Commissioner has made final order approving plan for regulation of flow of upper Hudson River by the construction of a storage reservoir on Secandaga River, near Conklingville, at a cost of \$4,650,000.

Charlotte, N. C.—Citizens will vote July 4 on \$865,000 bonds for water works and other improvements.

Clinton, N. C.—Citizens have voted \$30,000 water and sewer bonds.

Cleveland, O.—Bids will be received about July 1 for construction of proposed water tunnel.

Dayton, O.—Council has voted to acquire land for sinking proposed well and as site for giant underground reservoir, which will be connected with present water-works pumping station by concrete conduit.

East Liverpool, O.—Mayor Samuel Crawford has signed ordinance appropriating \$50,000 for installation of a well system. C. V. Beatty, Director Public Service.

Old Harbor, O.—Installation of \$31,000 water works plant is being considered.

Wanoka, Okla.—Wm. Haviland, Alva, is preparing plans for construction of water works and electric light plant.—C. D. Willard, Town Clerk.

Philadelphia, Pa.—Citizens have voted \$500,000 loan for construction of mill district high-pressure fire main system.

Henry, S. D.—Town is arranging for construction of municipal water system.

Greenville, Tenn.—Citizens will vote June 5 on \$65,000 bonds for construction of water works and electric light plant.

Haskell, Tex.—Extension of water mains at cost of \$5,000 is being considered.

Nocona, Tex.—City will construct water system at cost of about \$20,000; erect concrete pumping station; steel tower and tank of 50,000 gallons capacity; concrete reservoir, 100,000 gallons capacity. Fountain-Shaw Engineering Co., Dallas, Engineers.—Walter Hodges, Mayor.

Yorktown, Tex.—City will install 6-in. pipe for water mains extension; cost, \$6,000.—J. W. Hoff, Mayor.

Santaquin, Utah.—Town is considering bond issue for establishment of water system.

Point Pleasant, W. Va.—Council of North Point Pleasant has passed ordinance providing for \$6,000 bond issue for construction of water works.

Shinnston, W. Va.—Citizens have voted bonds for improving of water works, sewers and streets.

Montreal, Que., Can.—Plans and specifications have been completed for six-acre final sand filter plant for the Montreal water works; it is expected that specifications will be printed and tenders formally called for by Board of Commissioners, City Hall, during the first few days in June, tenders to be opened about five weeks

later; also that plans and specifications for filtered water reservoir and preliminary filters will be completed during latter part of June, ready for advertising.—Geo. Janin, Chief Engineer, Department of Public Works; Hering & Fuller, New York City, Consulting Engineers.

CONTRACTS AWARDED

Tucson, Ariz.—Building reinforced concrete standpipe, 1,000,000 gals. capacity to the Concrete Constr. Co., of Tucson; the structure is to be 90 ft. high by 45 ft. diam., with dome-shaped roof; the plans were prepared by L. A. Waterbury, Tucson.

Sacramento, Cal.—To Braun, Williams & Russel, Inc., 303 Market st., San Francisco, for erecting steel smoke stack 8 ft. in diameter by 188 ft. high for city.

Pittsfield, Mass.—Laying 10,500 ft. of 18-in. water main from the Farnham dam toward center of city, to Daniel A. Dory, Natick, \$10,018; other bidders: S. Camisia, of West Medford, \$10,474; Crowe & Walsh, of Pittsfield, \$12,456; Spinach Contr. Co., of Waterbury, Conn., \$13,645; Michael Russo, of Boston, \$14,148; Winston & Co., of New York, N. Y., \$16,762; Andrew Cusack, of Boston, \$17,693; Danis O'Riley & Co., of Pittsfield, \$20,723.

Lakewood, O.—Erecting steel water tower to Des Moines Iron & Bridge Co., Pittsburg, Pa., \$13,560.

Sapulpa, Okla.—Building water system to cost \$230,000, to Southwestern Engineering Co., Oklahoma City.

Willamina, Ore.—To Jacobson-Bade Co., Portland, for constructing water works.

Springdale, Pa.—Constructing 33,660 lin. ft. sewers, 35,660 lin. ft. c. l. water lines and a 350,000-gal. capacity reservoir, etc., from plans of Engrs. Douglass & McKnight, 1709 Union Bldg., Pittsburg, to McGlathery & Robb, Philadelphia, \$17,993.

Penticton, B. C.—Water works material: to Crane Co. for 10,000 ft. 12-in. pipe steel, lap welded, at \$1.1969, and 400 ft. 14-in. at \$1.6801, and gates for \$3,719; to Simson, Balkwell & Co., of Vancouver, for hydrants, \$2,668; to Canadian Fairbanks Co. for galvanized pipe, \$1,248, and to Drummond, McCall & Co., Montreal, Que., for steel pipe, \$2,850. F. H. Latimer, Consulting Engr., Penticton, B. C.

LIGHTING AND POWER

Fayetteville, Ark.—Fayetteville Electric Light & Power Co. will enlarge plant and install new machinery, cost \$20,000.

Oneonta, Ala.—D. M. Farson & Co., Chicago, Ill., are considering establishment of electric light plant; cost \$6,000.

San Bernardino, Cal.—The Southern California Gas Co. has petitioned Board of Supervisors for franchise for a period of five years to construct gas mains and laterals on all the roads within county; about \$100,000 will be expended first year.

Wilmington, Del.—Street and Sewer Department is testing street lighting system, whereby are lights are replaced by numerous incandescent lamps strung along streets.

Wilmington, Del.—Street and Sewer Directors are seeking cost of conduit to carry all wires underground on Market st.

Blackshear, Ga.—Town is considering construction of electric light plant.

Manito, Ill.—Erection of a new power station for municipal electric light plant is being considered.

Terre Haute, Ind.—The Citizens' Heating Co. will soon ask for a heating plant to be located on Tippecanoe st.; also for laying main in Tippecanoe st.

Humboldt, Ia.—Northern Iowa Power Co., Humboldt, has been incorporated to operate light, heat and power plant; capital, \$1,000,000. N. T. Guernsey, F. A. Brown, A. G. Ripley and others, all of Des Moines, incorporators.

Lafayette, La.—Superintendent W. L. Eryls of Electric Light and Water Works has recommended that plant be changed from direct current to alternating system; improvements planned will cost \$40,000.

Boston, Mass.—Council has accepted legislative act authorizing city to borrow \$1,000,000 for installation of high-pressure water system.

Eveleth, Minn.—Bids will be asked for installation of four white way standards on Pierce st.

Rochester, Minn.—Earle D. Jackson, St. Paul, is preparing plans for street lighting system.

Moss Point, Miss.—F. Lynn Brown, Chicago, will at once erect \$150,000 gas plant.

Belton, Mo.—Citizens have voted to construct electric light system.

St. Louis, Mo.—Arcadia County Club will construct a dam and hydro-electric plant; cost \$50,000.—Dixon-Smith Engineering Co., 818-820 Wright Bldg., St. Louis, Mo., Consulting Engrs.; Henry C. Muskoff is Landscape Engineer.

Billings, Mont.—Steps toward the erection of an improvement district for decorative lighting purposes have been taken by council.

Albany, N. Y.—Municipal Gas Co. has accepted city lighting contract and proposes to enlarge and improve plant on Trinity Place for generating sufficient electrical power to supply city and commercial supply.

Rockville Centre, L. I. N. Y.—Citizens have voted \$11,000 bonds for addition to the electric light plant. F. G. Hooley, Village Attorney.

Syracuse, N. Y.—Public Service Commission of the Second Department has authorized the Syracuse Lighting Company to issue additional bonds to amount of \$456,000 for general extension and improvement work in both gas and electric service.

Glen Ullin, N. D.—C. E. V. Draper, Mandan, has petitioned Council for franchise to install electric light plant.

Greenspring, O.—D. M. Scott has been granted franchise for 25 years to operate electric light and power plant.

Pleasant City, O.—The Midland Power & Traction Co. will extend lines to Pleasant City in near future.—W. A. Gibbs, Cambridge, General Manager.

Wanoka, Okla.—Wm. Haveland, Alva, is preparing plans for installation of electric light plant.—C. D. Willard, Town Clerk.

Claysville, Pa.—Council has granted franchise to the Claysville Electric Light, Heat & Power Co. A. C. Whitaker, Wheeling, W. Va., and M. G. Hertzog, Claysville, are interested.

Edgefield, S. C.—Citizens have voted \$15,000 bonds to establish electric system.

Faith, S. D.—Mills & Harrington will construct 100-kw. electric light, heat and power plant; cost about \$10,000; steam equipment is needed.—M. E. Brookman, Eagle Butte, S. D., Engineer.

Gallatin, Tenn.—City let no contract May 5 for supplying Corliss engine, two 100-kw., 3-phase engine-type generators, two marble switchboards and two electrically-operated pumps of 500 gals. capacity per minute; specifications will be changed and new bids called for.—L. Anderson, Chairman Water and Light Commission.

Greeneville, Tenn.—Citizens will vote June 5 on \$65,000 bonds for construction of electric light plant and water works.

Knox City, Tex.—R. W. Warren and associates have decided to construct electric light plant.

Radford, Va.—Dominion Power Co., Radford, has been chartered by State Corporation Commission to operate water, electric, steam and other power plants.—J. J. Mott, Statesville, N. C., President.

CONTRACTS AWARDED

Jacksonville, Fla.—To the James N. Bruin Company for building certain portions of new electric light power station, which the city is arranging to erect on Talleyrand ave.

Uxbridge, Mass.—Building electric light plant addition for Worcester Suburban Electric Co., to E. W. Ward & Co., Worcester.

Barberton, O.—Council has passed resolution accepting bid of the Sun Vapor Street Light Company, of Canton, for lighting streets of the city for period of three years.

Ogden, Utah.—By Merchants' Light & Power Co., Ogden, which has recently been granted franchise for the lighting and power, and which has also obtained the municipal arc lighting contract to the Falkenau Electrical Construction Co., of Chicago, general contract for the complete installation and construction of system. Work will be undertaken immediately and pushed to rapid completion.—H. A. Strauss, Consulting Engineer, Stock Exchange Bldg., of Chicago, has prepared plans and specifications for system and is now engaged in making the necessary purchases.

FIRE EQUIPMENT

Los Angeles, Cal.—Establishment of fire station in Wilshire District is being urged.

San Francisco, Cal.—Fire Chief Murphy is advocating motor chemical engines and auto for Battalion Chief.

Hartford, Conn.—Fire Board proposes to expend \$65,000 for erection of fire house, \$6,500 for water tower and \$4,000 for rebuilding Truck No. 1.

Boise, Ida.—Citizens will vote on \$35,000 appropriation to purchase 80-ft. hook and ladder truck, 3,000 ft. of hose and 50 fire alarm boxes; also minor equipment.

Freeport, Ill.—Citizens will soon vote on \$15,000 bonds to purchase fire apparatus.

Decatur, Ind.—Business men of city have decided to erect fire house and equip it with combination auto truck, hose cart and chemical engine.

Fort Wayne, Ind.—Board of Public Safety has decided to ask bids for 500 ft. of fire hose.

New Albany, Ind.—Site at Culbertson ave. and Thomas st. has been purchased for erection of reel house for fire department.

Tolleston, Ind.—Council is considering erection of fire station on Ridge road.

Lewiston, Me.—Board of Fire Commissioners has recommended purchase of auto fire truck.

Blackstone, Mass.—Fire department has been organized.—John H. Dwyer, Chief.

Holyoke, Mass.—Fire Commissioners have voted to secure a 35-ft. ladder aerial truck at once, appropriation being available.

Lawrence, Mass.—Chief Engineer D. E. Carey has recommended purchase of 3,000 ft. of 2½-in. hose and at least two wagon guns.

New Bedford, Mass.—Board of Fire Engineers has voted unanimously to recommend to Council purchase of automobile for Chief Dahill.

Waltham, Mass.—Board of Aldermen is considering \$2,000 auto wagon for Chief Johnson.

Lansing, Mich.—Fire Chief H. R. Delfs has recommended purchase of 2,000 ft. of hose, 15 fire alarm boxes, 6 circuit repeaters for alarm system, auto truck for use of electrical department, also erection of fire station.

Norway, Mich.—Town is considering purchase of equipment.

Eveleth, Minn.—City is planning to erect two-story \$10,000 fire hall.

Laporte, Minn.—Town is considering purchase of auto fire truck.

St. Joseph, Mo.—Fire Chief P. P. Kane has recommended erection of fire station at 6th and Jule sts., rebuilding of hook and ladder house at 7th and Charles sts., erection of new fire houses at 4th and Sycamore where city has a lot, and one in eastern part of city, somewhere between Pavaon st. and Mitchell ave.; better fire protection in South St. Joseph, new, up-to-date aerial water tower, new hose wagon for No. 2 fire house, and placing all wires underground within the first-class fire limits.

Hackensack, N. J.—Mayor Chas. W. Bell has recommended need of auto pumping engine.

Passaic, N. J.—No bids were opened May 19 for furnishing and installing police signalling system, fire-alarm equipment and municipal telephone exchange for city; specifications will be revised and new bids called for. Thos. R. Watson, City Clerk.

Westfield, N. J.—Fire Chief Decker is receiving information concerning auto apparatus.

Yonkers, N. Y.—Council is considering ordinance for purchase of three autos for Fire Chief and his assistants; cost \$1,500 each.

Raleigh, N. C.—National Board of Fire Underwriters has recommended establishment of paid fire department, purchase of additional hose and auto combination engine and hose wagon, also minor equipment.

Hamilton, O.—Council has purchased site on West High st. for erection of central fire station and city hall.

New Carlisle, O.—Town has decided to purchase fire engine.—C. E. Meredith, Chief.

Springfield, O.—Fire Chief S. F. Hunter has recommended purchase of four auto engines.

Baker, Ore.—Mayor C. L. Palmer is investigating merits of auto-fire engine, which city contemplates installing.

Patton, Pa.—Patton Volunteer Fire Co. No. 1 has decided to erect \$6,000 fire hose at Fourth and Magee aves.—F. H. Kinkead, Chairman Plan Committee.

Philadelphia, Pa.—Citizens have voted \$300,000 loan for fire house and police station and \$140,000 for fire and police apparatus and fire boat.

Pittsburg, Pa.—Council is considering purchase of three fire trucks.

Sumter, S. C.—Council has decided to ask for bids for auto fire equipment. Address Chairman Glenn of Fire Department.

Waco, Tex.—Fire Commissioner John F. Wright is securing bids on auto patrol wagon.

Salina, Utah.—Organization of volunteer fire department and purchase of hose cart and ladders are being considered.

CONTRACTS AWARDED

Springfield, Mass.—By Board of Fire Commissioners, to J. G. Roy, for erecting addition to Pine st. engine house, \$23,550.

Paterson, N. J.—Conversion of hose wagons of Engine Companies Nos. 1 and 5 to gasoline-propelled machines, to the William J. Tynan agency, \$6,000 each; contracts for conversion of the steamers of above companies to self-propelled apparatus, to Nott Fire Engine Co., \$6,000 each; supplying self-propelling hook and ladder truck, to William J. Tynan agency, \$5,225.

BIDS RECEIVED

Oakland, Cal.—Furnishing fire engines and other apparatus for the fire department. For three combination chemical and hose wagons: Consolidated Motor Car Co., \$15,750; Olsen & Hunter Auto Co., \$15,000; Webb Motor Fire Apparatus Co., \$15,375; Reliance Automobile Co., No. 1, \$14,940; Reliance Automobile Co., No. 2, \$16,440; The Seagrave Co., \$14,685; Kanawah Chemical Fire Engine Co. (per wagon), \$4,950; for one hose wagon, Joseph Felrotti, \$494.95.

Paterson, N. J.—Converting present chemical engine, which is to be stationed at West Paterson, into self-propelling apparatus; James Boyd & Son, 40-h.p. machine, \$2,935; William J. Tynan Agency, Sampson truck, \$3,200; William J. Tynan, 50-h.p. Knox, \$3,700; William J. Tynan, 40-h.p. Knox, \$3,700; Hughes Garage Co., 2-ton, 32-h.p. Kelly truck, \$3,365.

Syracuse, N. Y.—Gamewell Fire Alarm Telegraph Co. submitted lowest bid, \$23,875, for installing central office fire alarm system to the Board of Contract and Supply; only other proposal was by Star Electric Company, \$29,100.

BRIDGES

Tampa, Fla.—Council has adopted resolution instructing Board of Public Works to proceed at once with matter of building bridge at Lafayette st., of dimensions adequate to needs of the city at that point.

Indianapolis, Ind.—The County Commissioners have appropriated \$3,500 for the construction of bridge over the canal at Sunset ave., and \$5,000 for bridge over Little Eagle Creek at West Washington st.

Mishawaka, Ind.—Bridge over St. Joseph River at Logan st. has been assured by County Commissioners.

Eldora, Ia.—County Commissioners have voted to construct two new steel bridges with concrete floor, one at Eldora, 400 ft. long, and one at Iowa Falls, 350 ft. long; cost about \$15,000 each.—E. L. Marriage, Eldora, County Auditor.

Topeka, Kan.—The City Engineer is drawing up plans and specifications for reconstruction of Fillmore st. bridge.

Topeka, Kan.—County Board of Shawnee and Jefferson Counties have decided to erect \$21,000 bridge across Kaw River.

Independence, Mo.—Citizens will vote June 13 \$40,000 bonds for bridge and culvert construction.

Watertown, N. Y.—Citizens have defeated proposed \$135,000 bond issue for Jackson st. bridge.

Toledo, O.—Bids will be received June 21, 1.30 p. m., for \$150,000 bonds for building bascule lift draw for bridge now being constructed.—J. J. Lynch, City Auditor.

Philadelphia, Pa.—Citizens have voted \$200,000 loan for construction of bridges.

Benton, Tenn.—Polk county has sold \$75,000 bonds for bridge and road construction and erection of two school buildings.

Collins, Wis.—Construction of a bridge over Manitowoc River is being considered, cost \$12,000.

Milwaukee, Wis.—Council has authorized erection of \$120,000 bridge at Oneida st.

CONTRACTS AWARDED

Louisville, Ky.—By Board of Public Works, for building of Underhill concrete arch bridge at Churchill st., to the National Concrete Co.; other bidders: L. R. Figg & Co., \$14,147.45; the Henry Bickel

Scranton, Pa.—Bids received May 15 for construction of Mulberry st. viaduct.—(A) Fort Pitt Bridge Works, Pittsburg, Pa.; (B) The Jebson-Gifford Co., New York; (C) M. H. Stebbins, Wellsboro, Pa.; (D) Oswego Bridge Co.; (E) W. W. Lindsey & Co., Philadelphia, Pa.; (F) York Bridge Co., York, Pa.; (G) Carlucci Stone Co., Scranton, Pa.; (H) Penn Bridge Co., Beaver Falls, Pa.; (J) The Pennsylvania Steel Co., Steelton, Pa.:

	A	B	C	D	E	F	G	H	J
1—Work complete, except piles...	\$238,543	\$239,950	\$212,460	\$214,000	\$214,000	\$194,745	\$202,477	\$211,000	\$208,900
1—A. Entire work complete, except concrete piles and reinforced concrete floor, substituted for buckle plates on driveway.....	233,752	239,950	207,500	209,700	209,700	187,947	200,427	205,000	206,400
2—15 piles, 25 ft. long.....	1.35	1.35	1.45	1.40	1.40	1.30	1.15	1.46	1.35
3—85 piles, 45 ft. long.....	1.15	1.15	1.30	1.20	1.20	1.10	1.00	1.31	1.10
4—160 piles, 60 ft. long.....	1.20	1.20	1.40	1.25	1.25	1.15	1.05	1.41	1.15
5—200 cubic yds. excavation.....	.70	2.00	1.00	1.00	1.50	.70	.80	.98	1.00
6—Embankment, 200 cu. yds.....	.95	.80	.50	1.00	.75	.25	.30	.51	1.00
7—Conc. in founda., per cu. yd.....	6.00	7.00	7.00	8.00	5.50	4.90	4.90	7.25	8.00
8—Conc., 10 cu. yds. (1-3-6).....	7.50	7.50	7.50	9.00	8.00	5.00	5.00	7.45	10.00
9—Conc., 10 cu. yds. (1-2-4).....	8.00	8.50	9.00	10.00	12.00	5.30	5.30	9.25	12.00
10—Gran. bridge seats, 2 cu. yds.....	25.00	30.00	30.00	70.00	25.00	35.00	70.00	29.00	75.00
11—Steel reinf. rods, 4,000 lbs.....	.03	.05	.026	.03	.03	.015	.015	.025	.025
12—20 sq. ft. granolithic sidewalk.....	2.05	2.00	1.70	1.62	2.00	1.15	1.17	1.75	2.00
13—40 cu. ft. curb.....	.60	1.25	.80	.75	1.00	.45	.46	1.00	1.00
14—20 sq. ft. dry wall, rip-rap.....	4.00	5.00	2.50	4.00	3.00	1.50	1.62	2.55	4.00
15—20 sq. yds. asphalt pavement.....	3.25	2.25	2.50	2.25	2.50	1.98	1.98	2.45	2.50
16—One inlet, includ. catch basin.....	125.00	100.00	65.00	35.00	100.00	25.00	25.00	64.00	150.00
17—10-inch steel pipe, 30 lin. ft.....	2.00	1.25	1.70	2.00	2.00	1.90	2.00	1.75	3.00
18—10-inch c. i. pipe, 30 lin. ft.....	2.00	1.00	1.22	2.00	2.00	1.25	1.30	1.20	2.50
19—10 and 12-inch vit. pipe, 50 ft.....	1.00	.50	.60	.75	.60	.70	.75	.55	.75
20—Galvanized iron pipe, 20 ft.....	1.10	1.00	2.25	1.50	1.50	1.05	2.00	2.15	1.00
21—Structural steel, 8,000 lbs.....	.0375	.04	.035	.04	.04	.035	.04	.325	.04

MISCELLANEOUS

Bridgeport, Conn.—Police Board has adopted plans by E. G. Southey for \$26,000 police station in West End.

Wilmington, Del.—Police Commissioners are considering installation of auto patrol wagons.

Sarasota, Fla.—Plans are being made for securing of a city park.

Springfield, Ill.—Citizens have voted \$40,000 bonds for purchase of Mildred Park.

Fort Wayne, Ind.—Dr. E. A. Crull, of Health Board, has recommended need of new crematory.

Indianapolis, Ind.—Council is considering plans for erection of two buildings, cost \$110,000, at city hospital.

Logansport, Ind.—Council has appropriated \$5,000 for auto police patrol.

Webster, Mass.—Board of Selectmen will purchase auto police patrol.—Geo. J. Brunell is interested.

St. Paul, Minn.—Council has authorized City Engineer Claussen to ask for bids for three high-pressure street flushers and one oil sprinkling wagon.

Virginia, Minn.—Park Board is having plans prepared for erection of rest house in park.

Biloxi, Miss.—Council is considering plans for public pier, parks and playgrounds and athletic park.

Independence, Mo.—Citizens will vote June 13 on \$10,000 bonds for market square.

Maryville, Mo.—Citizens will vote June 6 on \$15,000 bonds to erect city hall.

Manchester, N. H.—Council has decided to raise \$300,000 by bond issue to erect city hall.

Manchester, N. H.—City will erect \$10,000 comfort station under Merrimack Common and \$5,000 addition to city library.

Irvington, N. J.—Bids will be received June 5, 8 p. m., for \$10,000 improvement bonds.—M. Stockman, Town Clerk.

New York, N. Y.—Board of Estimate and Apportionment has decided to establish Fuel Testing Laboratory; following supplies will be needed: Pulverizing machinery, \$600; repairs and additions, \$400; chemicals and apparatus, \$200; new standard calorimeter, Mahler Atwater, \$800; crusher outfit, \$3,500; oxygen, 135 tanks at \$5, \$685.

Syracuse, N. Y.—Board of Contract and Supply has directed Secretary John J. Halloran to advertise for proposals to excavate by steam shovel about 135,000 cu. yds. of earth in Onondaga and Lincoln Parks and for bids for constructing concrete basin for fountain in Forman Park.

Yonkers, N. Y.—Council is considering ordinance for purchase of two auto ambulances at cost of \$2,000 each.

Michigan City, N. D.—City hall will be erected in near future.

Akron, O.—Council has passed ordinance to improve Pleasant Park by building retaining wall on one side of park; cost, \$1,550.

Dayton, O.—Landscape Architect Olmstead has completed and turned over to City Park Board plans for extensive park system; work includes appropriation of hundreds of acres of land in and about city, scores of miles of boulevards, reclamation of Pearl st., Tenderloin district and of waste bottom lands; \$500,000 bond issue is asked.

Massillon, O.—Safety Director Shepley has asked \$2,500 appropriation for purchase of two street flushing machines.

Durant, Okla.—Bryan County is considering bond issue for erection of jail and court house.

Baker, Ore.—Mayor C. L. Palmer is investigating street cleaning in other cities.

Doylestown, Pa.—Bucks County Commissioners will erect dykes in Falls Township along banks of Delaware, to prevent destruction of property by overflows of river.

Erie, Pa.—Council has decided to purchase horses and wagon at once to care for garbage until proposed plant can be erected.

Oxford, Pa.—Council is considering election on \$10,000 bonds for improvements.

Philadelphia, Pa.—Citizens have voted \$11,500,000 loan for following improvements: Erection of convention hall, \$1,500,000; purchase of property, improving Delaware and Schuylkill River fronts, \$600,000; improving League Island Park, \$500,000; Fairmount Park, \$400,000; new police stations and fire houses, \$300,000; building for care of feeble minded, \$250,000; building for treatment of contagious diseases, \$150,000; police and fire alarm apparatus and fire boat, \$140,000; soldiers' and sailors' monument, \$100,000; reconstruction of city hall elevators, \$100,000; improvements to Hunting and Pennypack Creek parks, \$100,000, and children's playgrounds, \$100,000.

Sioux Falls, S. D.—Moody County is considering erection of \$75,000 court house.

Dyersburg, Tenn.—Citizens have voted \$30,000 bonds for improvements.

Humboldt, Tenn.—Citizens will vote June 27 on \$15,000 bonds to erect city hall.

Nashville, Tenn.—Council is considering \$3,000 appropriation for purchase of auto patrol wagon and \$2,400 for purchase of auto runabout.

Waco, Tex.—Mayor H. B. Mistrot and Fire Commissioner John F. Wright are securing bids on combined auto patrol wagon and ambulance.

CONTRACTS AWARDED

Hagerstown, Md.—Furnishing 25 waste-paper cans to be placed in different parts of the city to the Hoch Manufacturing Co., \$1.72 each.

Utica, N. Y.—Construction of subway extension to Safety Insulated Wire & Cable Co., 114 Liberty st., N. Y., \$29,906.20; other bidders: J. R. Baxter, Jr., \$33,846.10; Harry W. Roberts & Co., \$36,645.20; N. D. Peters & Co., \$37,396.80; Warner Quinlan Co., Syracuse, \$37,619; T. M. McLeod Co., \$40,131; The Hickey Contracting Co., \$44,917.89; J. R. O'Rourke & Co., \$45,486.

Scranton, Pa.—By Director of Public Works C. V. Terwiler for building city market to the Hagen Lumber Company, \$1,653 for 32 stalls and \$51 for each additional stall.

Bingham, Utah.—By Town Board to D. H. Clayton, Jr., for erection of jail and to Pauly Jail Co. for steel work; cost about \$3,500.

BIDS RECEIVED

Indianapolis, Ind.—Removing garbage for period beginning May 26, 1912: Indianapolis Sanitary Co. asked \$63,000 a year for five years and \$62,000 a year for a 10-year contract; Gemmer & Henry asked \$69,000 a year on 5-year contract and \$64,000 a year on 10-year contract; the Indianapolis Sanitary Co. is the present contractor at \$52,000 a year, having a 5-year contract.

Brooklyn, N. Y.—Constructing Bushwick playgrounds, bounded by Putnam ave. and Woodbine st. extension, between Knickerbocker ave. and Irving ave., Borough of Brooklyn, Cosgrove-Daly Co., 1968 Bway,

New York City, lowest bidder, as follows: 3,800 cu. yds. excava., 78c.; 40 cu. yds. class "A" concrete, \$7.90; 810 cu. yds. class "B" concrete, \$6.30; 13,600 sq. yds. cinder and gravel pavt., 28c.; 500 lin. ft. 2-in. gal. w. i. water pipe, 35c.; 4 street washers, \$5; 400 lin. ft. 12-in. vitr. drain pipe, 88c.; 500 lin. ft. 8-in. vitr. drain pipe, 50c.; 4 brick catch basins, each \$50; 2 drinking fountains, each \$48; 1,480 lin. ft. w. i. picket fence, \$2.50; 695 lin. ft. pipe rail and wire-mesh fence, \$2.40; 260 lin. ft. bluestone curb set in concrete, \$1; 1,700 sq. ft. cement sidewalk, 15c.; 450 cu. yds. top soil, 50c.; 1,800 sq. ft. sod, 3c.; total, \$19,465; totals of other bids: Geo. F. Driscoll, 548 Union St. Brooklyn, \$19,978; Wm. J. Garcey, 544 Bway, L. I. City, \$19,731; Kelly & Kelley, Inc., 12th st., L. I. City, \$21,727; Norton & Gorman Contr. Co., 339 Douglass st., Brooklyn, \$23,840; O'Grady Bros., 69 N. 8th st., Brooklyn, \$21,229.

Buffalo, N. Y.—Construction of foundation for a Heenan-Froude 40-ton, three-grate destructor, a 125-h.p. boiler, fan blower and engine, air duct, flue and opening in stack for the refuse utilization plant at the old Hamburg Canal site at Hamburg and Scott sts., B. I. Crooker Co., lowest bidder, \$3,377.

New York, N. Y.—Furnishing pedestal lampposts on Jay st., from South st.; retaining walls, railing and tablets on Stuyvesant pl.; retaining wall and curb lampposts on Jay st., South st., Hyatt st., Stuyvesant pl., Central ave., Arietta st. and Griffin st., being part of street improvements authorized for the St. George Ferry approach, Contract No. 6; Vulcan Rail and Construction Co., 172 North 9th st., Brooklyn, \$24,057; Charles Meades & Co., \$33,994; J. L. Mott Iron Works, \$34,410; McNarg Barten Co., \$25,700.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Colorado	Denver	June 3	Paving South Broadway	Board Public Works.
Pennsylvania	Pittsburg	June 3	Paving and re-paving with block stone portions of various streets, and constructing cement sidewalks.	Jos. G. Armstrong, Dir. Dept. P. W.
Pennsylvania	Mt. Oliver	June 5, 8:30 p.m.	Grading, curbing and paving portion of Carbon street.	Wm. McClurg Donley, Boro. Engr.
Pennsylvania	Etna	June 5, 5 p.m.	Grading and paving Kraus Alley	J. C. Armstrong, Boro. Clerk.
Florida	Tampa	June 6 noon	Clearing and grubbing county road from Ballast Point to Catfish Point, 60 ft. wide. Bids to be made per acre.	George Fuchs, County Engr.
Pennsylvania	Natrona	June 6	Grading, curbing and paving 7,000 sq. yds.	T. R. Kennedy, Township Engr.
California	Stockton	June 6	Grading and paving about 25,800 lin. ft. Davis & Tele. roads.	Eugene D. Graham, Clk. B. Sup.
New York	Great Neck	June 6, 2 p.m.	Grading, and laying concrete sidewalk from station to village.	David C. Will, Engr.
New York	Dunkirk	June 6	Grading and paving Leopard St.	R. H. Heppell, City Clerk.
Washington	Pasco	June 6, 8 p.m.	Excavating 6,950 cu. yds.; 78,690 sq. ft. sidewalk; 16,660 lin. ft. curb.	L. H. Koontz, City Clerk.
Pennsylvania	Sharon	June 6, 5 p.m.	Paving about 4,430 sq. yds.	Griff W. Nicholls, Boro. Engr.
Ohio	Cincinnati	June 9, noon	Improving Springfield Pike	Board County Comrs.
Maryland	Upper Marlboro	June 6	Grading and macadamizing about 1 mile of Queen Chapel Rd.	County Commissioners.
Iowa	Washington	June 7	Paving with brick North Iowa avenue.	Carl M. Keck, Chm. Imp. Com.
Washington	Auburn	June 7	Paving with hard surface paving about 16,000 sq. yds.; constr. 30,000 sq. ft. conc. walks and 7,000 conc. ft. curb.	Geo. Meade, Town Clerk.
New Jersey	Paterson	June 14, 2 p.m.	Improving Midvale-Greenwood Lake road by macadamizing.	Wm. H. Mason, Chm. Road Com.
SEWERAGE				
Washington	South Bend	June 5	Constructing sanitary and storm water sewers. Est. cost \$26,000	Chas. H. Mills, City Clerk.
Pennsylvania	Eddystone	June 5, 8 p.m.	Constructing pipe sewers	Jos. H. Griffith, Boro. Clerk.
New York	Brooklyn	June 7	Constr. 12 and 15-in. pipe sewers in portions of various streets.	Alfred E. Steers, Boro. Pres.
Utah	Salt Lake	June 9	Constructing pipe sewers in various streets.	H. G. McMillan, Chm. B.I. Pub. Wks.
Kentucky	Dawson Springs	June 10 noon	Constr. sanitary and storm water sewers, consisting of about 2,640 ft. 12-in. vitr. pipe sewer; 540 ft. 10-in.; 1,400 ft. 9-in.; 3,400 ft. 8-in., m.h., &c.	C. A. Niles, Mayor.
WATER SUPPLY				
Pennsylvania	Pittsburg	June 3	Installing two 20,000,000 gal. engines; new water ends and steam ends of 2 engines; also 6 water tube boilers in 3 batteries of 2 each; 6 mechanical stokers and appurtenances.	Jos. G. Armstrong, Dir. Pub. W. D.
Nebraska	Emerson	June 3	Constr. 4,000 ft. of water mains 4 and 6-in. pipe.	Guv. Inman, Village Chm.
Montana	Lewiston	June 12	Trench, and lay, 56,000 ft. of 4 to 12-in. water mains.	Phil. A. Chase, City Clerk.
Massachusetts	Williamsburg	June 15	Constr. a rubble masonry dam, 425 ft. long 40 ft. high with 2 spillways each 60 ft. long.	City Clerk.
LIGHTING AND POWER				
Indiana	Brazil	June 6	Lighting streets for period of 5 or 10 days.	J. M. Williams, Clk. B.I. Pub. Wks.
MISCELLANEOUS				
Pennsylvania	Etna	June 5, 5 p.m.	Erecting a 70-ft. steel bell tower capable of carrying bell and fixtures 2,500 lbs.; includes removing bell from old to new tower.	J. C. Armstrong, Boro. Clerk.
Pennsylvania	Scranton	June 7, 10:30 a.m.	Constr. 3 buildings to be used as fire houses.	W. G. O'Malley, Dir. Pub. Safety.
Indiana	Indianapolis	June 21	Collecting and disposing of garbage.	Edw. A. Ramsay, City Clerk.



**Hand-Wiped
Joint**

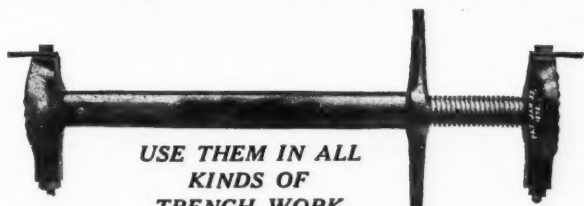
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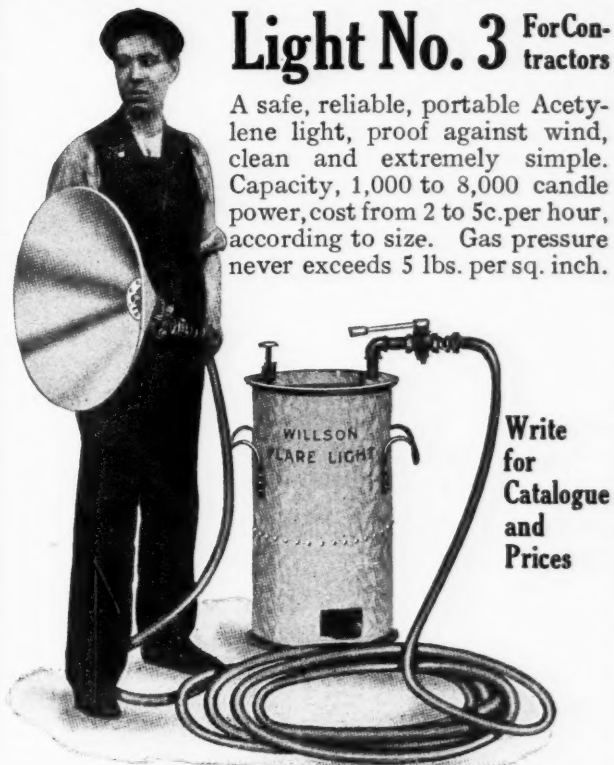
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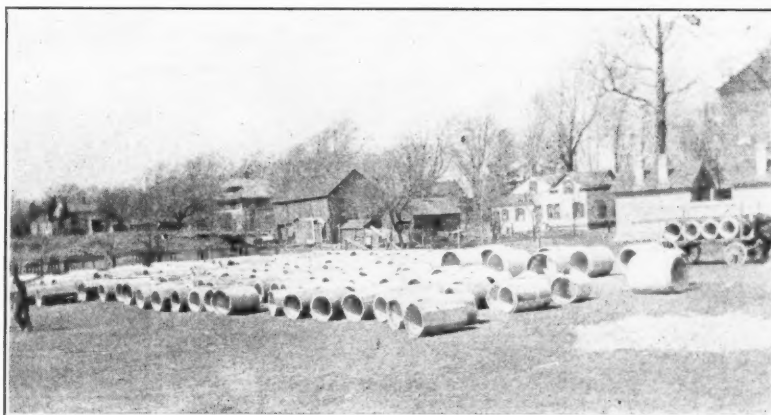
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Pacific Lock Joint Pipe Company, Seattle, Wash. Mexican Steel Products & Machinery Company, S. A., Mexico City, Mexico. Francis Hankin & Company, Montreal, Canada. F. H. McGavin Company, Ltd., Winnipeg, Canada. Huston Concrete Company, Havana, Cuba.

STREET IMPROVEMENTS

Los Angeles, Cal.—Tentative plan for proposed parkway and boulevard has been prepared by Laurie D. Cox, Landscape Engineer for Park Department.

Evansville, Ind.—County Commissioners have ordered building of First ave. road at cost of \$7,000.

Evansville, Ind.—Board of Public Works has ordered improvement of Blackford ave. between Evans and Kentucky Aves. with asphalt.

Gas City, Ind.—County Commissioners will macadamize west end of Main st. from terminus of brick paving to river bridge.

Leavenworth, Kan.—City Engineer O Neil has recommended cost of laying brick on Shawnee St. at \$22,472.77.

Colesville, Md.—Colesville District will vote June 10 on \$12,000 bonds to purchase portion of pike lying in district and to improve 1 mi. of Columbia road.

Saginaw, Mich.—Township of Richland has voted \$20,000 for stone road purposes, and township of Maple Grove \$10,000 for same purpose.

St. Paul, Minn.—The Board of Public Works is preparing to let contract for grading Goodrich, Osceola and Fairmount aves. from Hamline ave. to Griggs st., six blocks of grading in all. Excavation will amount to about 26,750 cu. yds. and the fill to 6,474; also 3,389 ft. of surfacing.

Mechanicville, N. Y.—Citizens have voted \$17,000 bonds to pave Saratoga st.

Hastings, Neb.—Council has decided to ask for bids for paving Denver and St. Joe aves. districts, and granted petition for paving Seventh st.

Cincinnati, O.—Board of County Commissioners have passed resolutions to oil Loveland and Madeira roads, Miami ave. and the Springfield pike; total cost, \$3,000.

Hillsboro, Ore.—City Council has adopted ordinances providing for bitulithic pavement on 11 blocks of streets.

Meadville, Pa.—All bids have been rejected and new proposals will be asked for paving Center st.

Woonsocket, R. I.—Macadamizing and widening of Harris ave. is being considered.

Sumter, S. C.—Council has decided to ask for bids for paving of various sorts.

Johnson City, Tenn.—Council has passed ordinance in which is outlined the boundaries of a new paving district; district embraces one and a quarter miles of streets. As soon as contracts can be let work of paving will go forward.

Dayton, Tex.—Precinct has voted \$275,000 bonds for building good roads; Liberty County Commissioners now have \$575,000 available for road work.

Brigham City, Utah.—Box Elder County has voted \$200,000 bonds to build roads and bridges.

Fort Worth, Tex.—City Commissioners have ordered grading and graveling of Ellis ave. and paving portion of East Front st. with vit. brick.

Monroe, Wash.—Council has decided to pave Main and Lewis sts.

Welland, Ont., Can.—Herbert J. Bowman has recommended construction of 134 mi. of good roads throughout Welland County at cost of \$375,000.

CONTRACTS AWARDED

Long Beach, Cal.—Paving with four inches of crushed rock, Tenth st., from Pine ave. to Main st., Park Circle to Ninth st., and Main st. from Ninth to Tenth, to White & Gaskell, 9 2-3c. per lin. ft. for curbing, and 24c. per sq. ft. for gutter.

Ocean Park, Cal.—Paving all alleys south of Windward ave. with vitr. brick and all alleys north of avenue with asphalt concrete, to Chas. H. Mattier, Los Angeles.

Virginia, Minn.—Laying 21,804 lin. ft. of cement curbing and gutter, to the C. C. Butler Contracting Company, Virginia, \$11,922.20; also seventy-two catch basins, \$900; cement alley crossings, 22½c. sq. ft.; cement sidewalks, 12½c. sq. ft.; excavating below sub-grade, 40c. sq. yd.; refilling below sub-grade, \$1.53 sq. yd.; other bidders were the H. L. Bartlett Company of Virginia and Johnson & Moynihan of Hibbing.

Bordentown, N. J.—Resurfacing Farnsworth ave. to Thos. J. Barrett, city, \$8,188.

Rochester, N. Y.—Goldsmith place, asphalt pavement from Troup to Spring sts., to Whitmore, Rauber & Vicinus, \$2,599; Depew st., asphalt pavement, Rochester, to Vulcanite Pavement Company, \$14,512; Nellis Park, asphalt pavement, to Whitmore, Rauber & Vicinus, \$6,895.25; Kenning alley, asphalt pavement, to Whitmore, Rauber & Vicinus, \$2,984.80; Heberling alley, asphalt pavement, to Whitmore, Rauber & Vicinus, \$1,148; Agnes st., sewer, cement walks and grading, to W. H. Madden, \$3,141.30; Ceon st. sewer, walks and grading, to W. H. Madden, \$3,177.30; Harvard st., sewer, John Petrossi Company, \$168; Anthony st., cement walks, to Crouch Brothers, \$630; Hoffner st., brick pavement, to

F. C. Lauer & Sons Company, \$4,080.

Cincinnati, O.—To R. E. Cash, to improve Bond road from Montgomery pike to Carthage pike, \$15,500; to E. Robinson, to repair Colerain pike from Mount Airy to Poole road at estimated cost of \$5,893, and for improving Compton road \$1,952; macadamizing Struble road to H. E. Steele, \$4,053.

Youngstown, O.—Bruce st. paving to Turner & Olsen, \$7,219; Grace st., paving, to Miller Brothers, \$2,800.50; Floral avenue sewer, to E. Dioro, \$745.50; Hawthorn, sewer, to E. Dioro, \$543.12; Clifton ave., grading, to Shook & Gray, \$1,832.12; Ayers st., grading, to M. P. Connelly, \$755.

Fort Worth, Tex.—Paving Allen ave., North and other streets, to Texas Bitulithic Co., \$2,084.

Dallas, Tex.—Grading Bishop st., to A. F. Moberly, \$3,551.70; other bidders were: Doty & Conley, \$3,659.48; Rex Tune, \$3,759.75; Cullom & Bayouset, \$3,985.33; M. C. Shipley, \$4,064.53; Will Coats & Co., \$4,515.70.

Tacoma, Wash.—Paving work in Local Improvement District No. 434, to Keasal Construction Co., \$59,471; estimate, \$68,729; grading Madison and Monroe sts., to Gal-luci & Rose, \$5,973; paving with concrete alley between G and Yakima aves., to Ollar Robinson & Co., \$1,125.

WATER SUPPLY

Laporte, Ind.—City has authorized preparation of plans for auxiliary water plant on shore of Stone Lake.

Sylvan Grove, Kan.—Citizens will vote June 26 on \$35,000 bonds for water works and electric lighting.

Las Cruces, N. M.—Bids will be received by Board of Trustees, July 1, 10 a. m., for \$40,000 bonds for construction of water works.

Price, Utah.—Citizens have voted \$9,000 bonds for extending water system and creating public park.

CONTRACTS AWARDED

Sioux City, Ia.—To U. S. C. I. Iron Pipe & Foundry Co., for 2 cars of 6-ft. pipe and 1 car 10-in., \$24.95 per ton; steel tank and tower, to Kennicott Co., 100,000-gal. cap., \$4,846; gate valve, to Rensselaer Valve Co.; three centrifugal pumps with D. C. motors, to Geo. J. Caldwell & Co., \$4,300; two gas-oil pumps and engines, to Fairbanks, Morse & Co., \$2,730.

New York, N. Y.—Construction of deep-pressure tunnel from Union Sq., Manhattan, to Fort Greene Park in Brooklyn, to the Holbrook, Cabot & Rollins Corporation, \$5,272,475; next lowest bid was that of the United Engineering & Contracting Co., \$5,295,218.50; to Mason, Hanger & Co., for construction of tunnel from Burnside ave., Yonkers, to 99th st. and Central Park West, \$3,709,372; next lowest bidder, Grant Smith, Locker & Co., \$3,775,552.

Cincinnati, O.—Laying water pipe to Mount Washington, to J. M. Quill, \$8,931.

Dallas, Tex.—Sinking three Woodbine wells for city, to Sharp & Company, \$2.50 per ft.

Sherman, Tex.—Sinking two additional wells, to Green Well Co., city.

MISCELLANEOUS

Cambridge, Mass.—Mayor Barry has recommended \$8,000 appropriation for erection of office building and other improvements at Cambridge cemetery.

Saginaw, Mich.—Park Board has decided to ask for new bids for erection of waiting room at entrance to Forest Lawn Cemetery; estimate, \$11,000.

Harrisburg, Pa.—Board of Public Works has selected James H. Fuentes as Consulting Engineer of river front and Paxton creek improvements.—William Jennings, President.

CONTRACTS AWARDED

Haddonfield, N. J.—Removing garbage, to Marmaduke Still, Lawnside.

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THE ENGINEERING AGENCY, Inc.

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PROPOSALS

BRICK AND GRANITE BLOCK PAVING

Portsmouth, N. H.

The Board of Public Works, Portsmouth, N. H., asks proposals for the following brick and granite block paving on a concrete base:

Furnishing and laying about 1,540 lineal feet of straight edgestone;

Furnishing and laying about 510 lineal feet of circular edgestone;

About 7,890 lineal feet existing edgestones to be reset;

About 14,250 square yards to be made in preparing roadway excavations;

About 14,250 square yards concrete base to be furnished and laid;

About 3,200 square yards granite block paving to be furnished and laid;

About 11,050 square yards brick block paving to be furnished and laid.

The proposal, with certified check for \$250.00, is to be left at the office of the Board of Public Works, before 12 o'clock noon, of June 5, 1911.

J. E. PARKER,
Engr. & Supt.

(24-31)

ENGINES, BOILERS, GENERATORS AND SWITCHBOARD EQUIPMENT

Dyersburg, Tenn.

Sealed proposals will be received by the City Water and Light Department, Dyersburg, Tenn., until noon, June 13, 1911, for engines, boilers, generators and switchboard equipment for additions to the electric light plant.

Specifications furnished on application to the department or to M. W. EWELL,
(24-31) Mayor.

City of London, Ontario

Engineering Department

Applications are invited by the City Council for the position of Assistant City Engineer of London. Such applications must be enclosed in plain envelopes and marked "Assistant City Engineer," and filed with the City Clerk not later than five o'clock on Thursday, June 1, 1911. A full statement of qualifications and references must also be enclosed.

S. BAKER,
City Clerk.

(26-31)

CIVIL SERVICE

NEW JERSEY CIVIL SERVICE COMMISSION

Trenton, N. J.

Examination will be held as follows:
On June 15th—

Traffic Inspector—Public Utility Commission, salary \$1,800 per annum. Open to candidates between the ages of 25 and 40 years.

Inspector of Gas and Gas Meters—Public Utility Commission, salary \$2,500 per annum.

Applications must be filed up to noon June 12th, 1911.

For particulars address

GARDNER COLBY, Chief Examiner.

Civil Service Commission, Trenton, N. J.

Junior Engineer—The United States Civil Service Commission announces an examination June 14 to fill vacancies in the position of junior engineer Water Resources Branch of the Geological Survey. Salaries \$900 to \$1,200, with expenses when on field duty. Form 1312.